



Paragon Analytics

Radiochemistry Case Narrative Gamma Spectroscopy

Kent & Sullivan Inc.

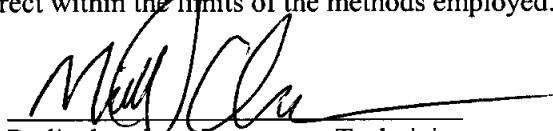
Ross Adams

Paragon Work Order 0405096

1. This report consists of analysis results for twenty-nine soil samples received by Paragon Analytics on 5/11/04. The analysis results for these samples are reported on a 'dry weight' basis in units of pCi/gram.
2. These samples were prepared according to Paragon Analytics procedure PA SOP739R8.
3. The samples were analyzed for the presence of gamma emitting radionuclides according to Paragon Analytics procedure PA SOP713R8. The analyses were completed on 7/21/04.
4. Sample volumes were insufficient to allow preparation of duplicates. A duplicate analysis of samples SSED-03 and SOIL-09 (PA ID's 0405096-13 and -31) was performed in lieu of prepared duplicates.
5. Duplicate analysis results above the DER warning limit of 1.42 have been flagged as "W" for Warn. For gamma spectroscopic analysis, SOP 715R13 states that 75% of the nuclides must be within the 2-sigma control limit to meet DER requirements. Elevated DER values may be attributable to sample inhomogeneity.
6. Activity concentrations above the calculated MDC are reported in some instances where minimum nuclide identification criteria are not met. Such tentative identifications result when the software attempts to calculate net activity concentrations for analytes where either one or both of the following criteria are not satisfied: the 'diagnostic' peak for a nuclide must be identified above the critical level, or the minimum library peak abundance must be attained. Nuclides not meeting these requirements have been flagged with a "TI" qualifier.
7. Paragon Analytics has found there to be a significant low bias to Pb-214 and Bi-214 results when using a mixed nuclide gamma source for efficiency calibrations. The magnitude of this bias has been determined to be approximately 32% for Bi-214, and 23% for Pb-214. Therefore, any reported results for Pb-214 and Bi-214 are flagged with a "J" qualifier, indicating the activity values to be an estimated value. Results are reported without further qualification.
8. There are cases where the sample density is less than the associated calibration standard density. Cases that exceed the limit of +/- 15% of the density of the calibration standard are flagged with a 'G', denoting a significant density difference between the sample and calibration standard. Consequently, the results may be biased high for the flagged results in this workorder. If requested, Paragon Analytics will perform a transmission spike in order to estimate a magnitude of this bias. The results are reported without further qualification.

9. Due to elevated levels of sample activity, minor lines of high activity nuclides can interfere with quantification of other nuclides. Samples with elevated Ac-228 activity will interfere with the quantification of Eu-155. Samples with elevated Pa-234m activity will interfere with the quantification of Th-227. In cases where these interferences are suspected, the affected nuclides have been assigned an "SI" flag denoting spectral interference.
10. The requested MDC of 0.2 pCi/gram for Ra-228 was not met for sample MSED-01 (PA ID 0405096-1), as indicated by an "M" qualifier. As the sample was counted for the maximum count time of 1,000 minutes, the results are reported without further qualification.
11. Due to elevated activity and subsequent elevated background from the Compton Continuum in several samples in this workorder, the requested MDC of 0.2 pCi/gram for Ra-228 was not met. These samples have been given a "M3" qualifier for Ra-228. As there is significant activity in these samples, the results are reported without further qualification.
12. There are cases where the magnitude of negative activity is greater than the 2-sigma TPU. Under typical conditions, where background data is normally distributed and analyzed by paired observations, this event is likely to occur at least 2.5% of the time. Review of the data does not indicate a problem with the instrument or reporting systems and results are reported without further qualification.
13. No further problems were encountered with either the client samples or the associated quality control samples. All remaining quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Radiochemistry Instrument Technician

7-23-04
Date



Radiochemistry Final Data Review

7/21/04
Date

1

PARAGON ANALYTICS
Radiochemistry Data Package

Section 1

**SAMPLE RESULTS
SUMMARY**

000003

A summary report is not provided.

Please refer to the individual sample results data in Section 3.

2

PARAGON ANALYTICS
Radiochemistry Data Package

Section 2

**QC RESULTS
SUMMARY**

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|---|---|
| Lab ID: GS040720-2MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 | Final Aliquot: 500 g Result Units: pCi/g |
| | Date Collected: 20-Jul-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Run ID: GS040720-2A Count Time: 120 minutes | File Name: 041258D08A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 15262-20-1 | Ra-228 | -0.007 +/- 0.081 | 0.145 | U |
| 14391-76-5 | Ag-110m | -0.002 +/- 0.015 | 0.027 | U |
| 14682-66-7 | Al-26 | 0.010 +/- 0.017 | 0.029 | U |
| 14596-10-2 | Am-241 | -0.014 +/- 0.021 | 0.040 | U |
| 13966-02-4 | Be-7 | -0.07 +/- 0.12 | 0.22 | U |
| 14913-49-6 | Bi-212 | 0 +/- 0.25 | 0.45 | U |
| 14733-03-0 | Bi-214 | 0.039 +/- 0.045 | 0.074 | U,J |
| 13982-30-4 | Ce-139 | 0.0082 +/- 0.0097 | 0.0158 | U |
| 14762-78-8 | Ce-144 | -0.010 +/- 0.058 | 0.103 | U |
| 14093-03-9 | Co-56 | 0.015 +/- 0.028 | 0.048 | U |
| 13981-50-5 | Co-57 | 0.0043 +/- 0.0069 | 0.0114 | U |
| 13981-38-9 | Co-58 | -0.005 +/- 0.015 | 0.029 | U |
| 10198-40-0 | Co-60 | -0.002 +/- 0.018 | 0.034 | U |
| 14392-02-0 | Cr-51 | 0.03 +/- 0.11 | 0.19 | U |
| 13967-70-9 | Cs-134 | -0.002 +/- 0.018 | 0.033 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | | |
|----------------------|--|--|---|-----------------------|
| Lab ID: GS040720-2MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Date Collected: 20-Jul-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Final Aliquot: 500 g Result Units: pCi/g Run ID: GS040720-2A Count Time: 120 minutes | File Name: 041258D08A |
| Library: KENT_FANP | | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | -0.005 +/- 0.016 | 0.030 | U |
| 14683-23-9 | Eu-152 | -0.013 +/- 0.092 | 0.175 | U |
| 15585-10-1 | Eu-154 | -0.010 +/- 0.092 | 0.170 | U |
| 14391-16-3 | Eu-155 | 0.004 +/- 0.032 | 0.055 | U |
| 14596-12-4 | Fe-59 | -0.002 +/- 0.033 | 0.060 | U |
| 10043-66-0 | I-131 | -0.001 +/- 0.012 | 0.022 | U |
| 13966-00-2 | K-40 | -0.02 +/- 0.22 | 0.41 | U |
| 13966-31-9 | Mn-54 | -0.004 +/- 0.015 | 0.029 | U |
| 13966-32-0 | Na-22 | 0.020 +/- 0.020 | 0.031 | U |
| 14681-63-1 | Nb-94 | -0.001 +/- 0.019 | 0.034 | U |
| 13967-76-5 | Nb-95 | 0 +/- 0.016 | 0.029 | U |
| 15100-28-4 | Pa-234m | -2.4 +/- 2.8 | 5.6 | U |
| 15092-94-1 | Pb-212 | -0.008 +/- 0.024 | 0.043 | U |
| 15067-28-4 | Pb-214 | 0.009 +/- 0.035 | 0.060 | U,J |
| 13967-48-1 | Ru-106 | -0.03 +/- 0.16 | 0.29 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral quality prevents accurate quantitation.

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B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|---|---|
| Lab ID: GS040720-2MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 | Final Aliquot: 500 g Result Units: pCi/g |
| | Date Collected: 20-Jul-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Run ID: GS040720-2A Count Time: 120 minutes | File Name: 041258D08A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | -0.002 +/- 0.018 | 0.032 | U |
| 14234-35-6 | Sb-125 | 0.002 +/- 0.034 | 0.061 | U |
| 13967-63-0 | Sc-46 | 0.001 +/- 0.016 | 0.030 | U |
| 15623-47-9 | Th-227 | -0.009 +/- 0.073 | 0.130 | U |
| 15065-10-8 | Th-234 | 0.02 +/- 0.17 | 0.30 | U |
| 14913-50-9 | Tl-208 | 0.003 +/- 0.022 | 0.038 | U |
| 15117-96-1 | U-235 | -0.016 +/- 0.069 | 0.123 | U |
| 13982-39-3 | Zn-65 | -0.002 +/- 0.035 | 0.066 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|---|---|
| Lab ID: GS040601-6MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 | Final Aliquot: 100 g Result Units: pCi/g |
| | Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Run ID: GS040601-6B Count Time: 1000 minutes | File Name: 041086D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 15262-20-1 | Ra-228 | 0.170 +/- 0.070 | 0.131 | TI |
| 14391-76-5 | Ag-110m | -0.012 +/- 0.012 | 0.019 | U |
| 14682-66-7 | Al-26 | -0.010 +/- 0.019 | 0.033 | U |
| 14596-10-2 | Am-241 | -0.004 +/- 0.034 | 0.057 | U |
| 13966-02-4 | Be-7 | -0.078 +/- 0.078 | 0.133 | U |
| 14913-49-6 | Bi-212 | 0.15 +/- 0.18 | 0.30 | U |
| 14733-03-0 | Bi-214 | -0.127 +/- 0.084 | 0.137 | U,J |
| 13982-30-4 | Ce-139 | -0.003 +/- 0.010 | 0.017 | U |
| 14762-78-8 | Ce-144 | -0.030 +/- 0.044 | 0.074 | U |
| 14093-03-9 | Co-56 | -0.007 +/- 0.057 | 0.095 | U |
| 13981-50-5 | Co-57 | 0.0026 +/- 0.0056 | 0.0092 | U |
| 13981-38-9 | Co-58 | -0.005 +/- 0.019 | 0.031 | U |
| 10198-40-0 | Co-60 | 0.010 +/- 0.018 | 0.029 | U |
| 14392-02-0 | Cr-51 | 0.012 +/- 0.067 | 0.111 | U |
| 13967-70-9 | Cs-134 | 0.039 +/- 0.021 | 0.032 | TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 4 of 9

000009

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|---|---|
| Lab ID: GS040601-6MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 | Final Aliquot: 100 g Result Units: pCi/g |
| | Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Run ID: GS040601-6B Count Time: 1000 minutes | File Name: 041086D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 10045-97-3 | Cs-137 | 0.011 +/- 0.013 | 0.022 | U |
| 14683-23-9 | Eu-152 | 0.005 +/- 0.092 | 0.153 | U |
| 15585-10-1 | Eu-154 | -0.05 +/- 0.12 | 0.20 | U |
| 14391-16-3 | Eu-155 | -0.012 +/- 0.024 | 0.040 | U |
| 14596-12-4 | Fe-59 | -0.002 +/- 0.028 | 0.047 | U |
| 10043-66-0 | I-131 | 0.0003 +/- 0.0094 | 0.0157 | U |
| 13966-00-2 | K-40 | 0.56 +/- 0.46 | 0.75 | U |
| 13966-31-9 | Mn-54 | -0.035 +/- 0.020 | 0.034 | U |
| 13966-32-0 | Na-22 | -0.012 +/- 0.018 | 0.030 | U |
| 14681-63-1 | Nb-94 | 0.008 +/- 0.021 | 0.035 | U |
| 13967-76-5 | Nb-95 | -0.005 +/- 0.018 | 0.029 | U |
| 15100-28-4 | Pa-234m | 2.4 +/- 1.7 | 2.6 | U |
| 15092-94-1 | Pb-212 | -0.007 +/- 0.031 | 0.051 | U |
| 15067-28-4 | Pb-214 | 0.013 +/- 0.058 | 0.096 | U,J |
| 13967-48-1 | Ru-106 | -0.02 +/- 0.12 | 0.21 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|--|--|
| Lab ID: GS040601-6MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes | Final Aliquot: 100 g Result Units: pCi/g File Name: 041086D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | -0.077 +/- 0.064 | 0.105 | U |
| 14234-35-6 | Sb-125 | 0.011 +/- 0.024 | 0.045 | U |
| 13967-63-0 | Sc-46 | -0.011 +/- 0.013 | 0.023 | U |
| 15623-47-9 | Th-227 | -0.077 +/- 0.070 | 0.118 | U |
| 15065-10-8 | Th-234 | 0.23 +/- 0.24 | 0.46 | U |
| 14913-50-9 | Tl-208 | 0.001 +/- 0.025 | 0.041 | U |
| 15117-96-1 | U-235 | 0.071 +/- 0.045 | 0.072 | U |
| 13982-39-3 | Zn-65 | -0.041 +/- 0.050 | 0.084 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

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B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 6 of 9

000011

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|---|--|
| Lab ID: GS040601-7MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes | Final Aliquot: 500 g Result Units: pCi/g File Name: 041077D03B |
|----------------------|---|---|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 15262-20-1 | Ra-228 | 0.033 +/- 0.030 | 0.048 | U |
| 14391-76-5 | Ag-110m | -0.0012 +/- 0.0065 | 0.0114 | U |
| 14682-66-7 | Al-26 | 0.0042 +/- 0.0087 | 0.0147 | U |
| 14596-10-2 | Am-241 | 0.020 +/- 0.041 | 0.068 | U |
| 13966-02-4 | Be-7 | 0.009 +/- 0.056 | 0.095 | U |
| 14913-49-6 | Bi-212 | 0.01 +/- 0.11 | 0.19 | U |
| 14733-03-0 | Bi-214 | 0.010 +/- 0.030 | 0.050 | U,J |
| 13982-30-4 | Ce-139 | -0.0028 +/- 0.0046 | 0.0079 | U |
| 14762-78-8 | Ce-144 | 0.012 +/- 0.028 | 0.048 | U |
| 14093-03-9 | Co-56 | -0.001 +/- 0.013 | 0.023 | U |
| 13981-50-5 | Co-57 | -0.0028 +/- 0.0038 | 0.0066 | U |
| 13981-38-9 | Co-58 | -0.0010 +/- 0.0063 | 0.0110 | U |
| 10198-40-0 | Co-60 | -0.0019 +/- 0.0083 | 0.0147 | U |
| 14392-02-0 | Cr-51 | -0.003 +/- 0.049 | 0.083 | U |
| 13967-70-9 | Cs-134 | 0.0175 +/- 0.0080 | 0.0120 | TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

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Abbreviations:

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MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 7 of 9

000012

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|-----------------------|---|---|---|
| Lab ID: GS040601-7MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 | Final Aliquot: 500 g Result Units: pCi/g |
| | Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Run ID: GS040601-6B Count Time: 600 minutes | File Name: 041077D03B |
| Library: KENT_FANP+Pa | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 10045-97-3 | Cs-137 | -0.0019 +/- 0.0073 | 0.0126 | U |
| 14683-23-9 | Eu-152 | 0 +/- 0.038 | 0.066 | U |
| 15585-10-1 | Eu-154 | -0.052 +/- 0.044 | 0.079 | U |
| 14391-16-3 | Eu-155 | 0.002 +/- 0.017 | 0.029 | U |
| 14596-12-4 | Fe-59 | 0.008 +/- 0.013 | 0.022 | U |
| 10043-66-0 | I-131 | -0.0075 +/- 0.0064 | 0.0113 | U |
| 13966-00-2 | K-40 | -0.02 +/- 0.17 | 0.29 | U |
| 13966-31-9 | Mn-54 | -0.0024 +/- 0.0071 | 0.0125 | U |
| 13966-32-0 | Na-22 | 0.0048 +/- 0.0079 | 0.0131 | U |
| 14681-63-1 | Nb-94 | -0.0086 +/- 0.0089 | 0.0155 | U |
| 13967-76-5 | Nb-95 | 0.0061 +/- 0.0071 | 0.0116 | U |
| 15100-28-4 | Pa-234m | 0.2 +/- 2.0 | 3.4 | U |
| 15092-94-1 | Pb-212 | -0.002 +/- 0.017 | 0.028 | U |
| 15067-28-4 | Pb-214 | 0.002 +/- 0.026 | 0.043 | U,J |
| 13967-48-1 | Ru-106 | -0.070 +/- 0.071 | 0.125 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 8 of 9

000013

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|----------------------|---|---|--|
| Lab ID: GS040601-7MB | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes | Final Aliquot: 500 g Result Units: pCi/g File Name: 041077D03B |
|----------------------|---|---|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 14683-10-4 | Sb-124 | 0.008 +/- 0.012 | 0.019 | U |
| 14234-35-6 | Sb-125 | -0.002 +/- 0.019 | 0.032 | U |
| 13967-63-0 | Sc-46 | -0.0083 +/- 0.0071 | 0.0129 | U |
| 15623-47-9 | Th-227 | 0.009 +/- 0.052 | 0.087 | U |
| 15065-10-8 | Th-234 | -0.05 +/- 0.18 | 0.30 | U |
| 14913-50-9 | Tl-208 | 0.0134 +/- 0.0080 | 0.0123 | TI |
| 15117-96-1 | U-235 | 0.008 +/- 0.029 | 0.048 | U |
| 13982-39-3 | Zn-65 | -0.006 +/- 0.016 | 0.027 | U |
| 14331-85-2 | Pa-231 | -0.10 +/- 0.20 | 0.35 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|-----------------------|---|--|--|
| Lab ID: GS040601-6LCS | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes | Final Aliquot: 100 g Result Units: pCi/g File Name: 041054D07A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Results +/- 2s TPU | MDC | Spike Added | % Rec | Control Limits | Lab Qualifier |
|------------|----------------|--------------------|-----|-------------|-------|----------------|---------------|
| 14596-10-2 | Am-241 | 1030 +/- 120 | 0 | 1010 | 102 | 85 - 115 | P |
| 10198-40-0 | Co-60 | 428 +/- 50 | 1 | 432 | 99.2 | 85 - 115 | P |
| 10045-97-3 | Cs-137 | 356 +/- 42 | 2 | 357 | 99.7 | 85 - 115 | P |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|-----------------------|---|--|--|
| Lab ID: GS040601-7LCS | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 01-Jun-04 Date Prepared: 01-Jun-04 Date Analyzed: 28-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes | Final Aliquot: 500 g Result Units: pCi/g File Name: 041089D02A |
| Library: ANALYTICAL | | | |

| CASNO | Target Nuclide | Results +/- 2s TPU | MDC | Spike Added | % Rec | Control Limits | Lab Qualifier |
|------------|----------------|--------------------|-----|-------------|-------|----------------|---------------|
| 14596-10-2 | Am-241 | 199 +/- 24 | 5 | 212 | 94.0 | 85 - 115 | P |
| 10198-40-0 | Co-60 | 113 +/- 13 | 0 | 119 | 94.7 | 85 - 115 | P |
| 10045-97-3 | Cs-137 | 87 +/- 10 | 1 | 85.6 | 101 | 85 - 115 | P |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|-----------------------|--|--|--|
| Lab ID: GS040720-2LCS | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Date Collected: 20-Jul-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Final Aliquot: 500 g Result Units: pCi/g Run ID: GS040720-2A Count Time: 30 minutes |
| Library: KENT_FANP | File Name: 041259D08A | | |

| CASNO | Target Nuclide | Results +/- 2s TPU | MDC | Spike Added | % Rec | Control Limits | Lab Qualifier |
|------------|----------------|--------------------|-----|-------------|-------|----------------|---------------|
| 14596-10-2 | Am-241 | 216 +/- 25 | 2 | 212 | 102 | 85 - 115 | P |
| 10198-40-0 | Co-60 | 114 +/- 13 | 0 | 118 | 96.4 | 85 - 115 | P |
| 10045-97-3 | Cs-137 | 84.4 +/- 9.9 | 0.6 | 85.5 | 98.7 | 85 - 115 | P |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

LT - Result is less than Requested MDC, greater than sample specific MDC.

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

SQ - Spectral quality prevents accurate quantitation.

L - LCS Recovery below lower control limit.

SI - Nuclide identification and/or quantitation is tentative.

H - LCS Recovery above upper control limit.

TI - Nuclide identification is tentative.

P - LCS Recovery within control limits.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Library: KENT_FANP | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 388 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041254D08A |
|---|---|--|---|

| CASNO | Analyte | Sample Result +/- 2 s TPU | Duplicate Result +/- 2 s TPU | DER | Control Limit | Lab Qualifiers |
|------------|---------|---------------------------|------------------------------|------|---------------|----------------|
| 15262-20-1 | Ra-228 | 0.77 +/- 0.26 | 0.58 +/- 0.24 | 0.53 | 2.13 | M3,G |
| 14391-76-5 | Ag-110m | 0.028 +/- 0.070 | 0.017 +/- 0.052 | 0.13 | 2.13 | U,G |
| 14682-66-7 | Al-26 | -0.010 +/- 0.056 | -0.060 +/- 0.075 | 0.54 | 2.13 | U,G |
| 14596-10-2 | Am-241 | 0 +/- 0.11 | -0.03 +/- 0.11 | 0.18 | 2.13 | U,G |
| 13986-02-4 | Be-7 | 0.3 +/- 1.0 | -0.66 +/- 0.90 | 0.72 | 2.13 | U,G |
| 14913-49-6 | Bi-212 | 1.4 +/- 1.1 | 1.13 +/- 0.92 | 0.23 | 2.13 | U,G |
| 14733-03-0 | Bi-214 | 0.63 +/- 0.20 | 0.54 +/- 0.17 | 0.34 | 2.13 | G,J |
| 13982-30-4 | Ce-139 | 0.028 +/- 0.057 | 0.025 +/- 0.056 | 0.04 | 2.13 | U,G |
| 14762-78-8 | Ce-144 | -0.07 +/- 0.26 | -0.07 +/- 0.28 | 0.01 | 2.13 | U,G |
| 14093-03-9 | Co-56 | 0.25 +/- 0.24 | 0.05 +/- 0.27 | 0.55 | 2.13 | U,G |
| 13981-50-5 | Co-57 | -0.009 +/- 0.037 | -0.022 +/- 0.035 | 0.26 | 2.13 | U,G |
| 13981-38-9 | Co-58 | 0 +/- 0.12 | -0.031 +/- 0.086 | 0.22 | 2.13 | U,G |
| 10198-40-0 | Co-60 | 0.028 +/- 0.055 | -0.052 +/- 0.057 | 1.01 | 2.13 | U,G |
| 14392-02-0 | Cr-51 | -0.9 +/- 2.5 | 1.8 +/- 2.6 | 0.74 | 2.13 | U,G |
| 13967-70-9 | Cs-134 | 0.013 +/- 0.069 | -0.015 +/- 0.068 | 0.29 | 2.13 | U,G |
| 10045-97-3 | Cs-137 | 0.011 +/- 0.064 | -0.030 +/- 0.053 | 0.49 | 2.13 | U,G |
| 14683-23-9 | Eu-152 | -0.09 +/- 0.32 | 0.08 +/- 0.29 | 0.39 | 2.13 | U,G |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 1 of 15

000013

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Library: KENT_FANP | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Date Analyzed: 21-Jul-04 | Final Aliquot: 388 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041254D08A |
|---|---|--|---|

| | | | | | | |
|------------|---------|------------------|------------------|------|------|-----|
| 15585-10-1 | Eu-154 | -0.22 +/- 0.35 | 0.09 +/- 0.27 | 0.69 | 2.13 | U,G |
| 14391-16-3 | Eu-155 | 0.06 +/- 0.13 | 0.06 +/- 0.13 | 0.00 | 2.13 | U,G |
| 14596-12-4 | Fe-59 | 0.32 +/- 0.38 | -0.14 +/- 0.36 | 0.89 | 2.13 | U,G |
| 10043-66-0 | I-131 | 9 +/- 29 | -11 +/- 27 | 0.50 | 2.13 | U,G |
| 13966-00-2 | K-40 | 12.4 +/- 2.5 | 9.7 +/- 2.2 | 0.83 | 2.13 | G |
| 13966-31-9 | Mn-54 | -0.012 +/- 0.060 | -0.018 +/- 0.079 | 0.06 | 2.13 | U,G |
| 13966-32-0 | Na-22 | -0.013 +/- 0.066 | -0.015 +/- 0.073 | 0.01 | 2.13 | U,G |
| 14681-63-1 | Nb-94 | -0.005 +/- 0.073 | 0.018 +/- 0.063 | 0.24 | 2.13 | U,G |
| 13967-76-5 | Nb-95 | 0.13 +/- 0.14 | 0.05 +/- 0.12 | 0.41 | 2.13 | U,G |
| 15100-28-4 | Pa-234m | 9 +/- 11 | -1.1 +/- 8.6 | 0.74 | 2.13 | U,G |
| 15092-94-1 | Pb-212 | 0.81 +/- 0.18 | 0.66 +/- 0.16 | 0.63 | 2.13 | G |
| 15067-28-4 | Pb-214 | 0.78 +/- 0.18 | 0.69 +/- 0.16 | 0.36 | 2.13 | G,J |
| 13967-48-1 | Ru-106 | -0.13 +/- 0.67 | 0.30 +/- 0.60 | 0.47 | 2.13 | U,G |
| 14683-10-4 | Sb-124 | -0.01 +/- 0.15 | 0.05 +/- 0.15 | 0.29 | 2.13 | U,G |
| 14234-35-6 | Sb-125 | 0 +/- 0.15 | 0.01 +/- 0.13 | 0.05 | 2.13 | U,G |
| 13967-63-0 | Sc-46 | -0.01 +/- 0.11 | 0 +/- 0.13 | 0.09 | 2.13 | U,G |
| 15623-47-9 | Th-227 | -0.03 +/- 0.29 | 0.05 +/- 0.30 | 0.19 | 2.13 | U,G |
| 15065-10-8 | Th-234 | 0.73 +/- 0.77 | 1.06 +/- 0.86 | 0.28 | 2.13 | U,G |
| 14913-50-9 | Tl-208 | 0.30 +/- 0.10 | 0.208 +/- 0.082 | 0.69 | 2.13 | G |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 2 of 15

000019

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Library: KENT_FANP | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 388 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041254D08A |
|---|---|--|---|

| | | | | | | |
|------------|-------|----------------|---------------|------|------|-----|
| 15117-96-1 | U-235 | 0.04 +/- 0.26 | 0.02 +/- 0.26 | 0.08 | 2.13 | U,G |
| 13982-39-3 | Zn-65 | -0.26 +/- 0.23 | 0.23 +/- 0.31 | 1.26 | 2.13 | U,G |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 102 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041048D10A |
|--|---|--|---|

| CASNO | Analyte | Sample Result +/- 2 s TPU | Duplicate Result +/- 2 s TPU | DER | Control Limit | Lab Qualifiers |
|------------|---------|---------------------------|------------------------------|------|---------------|----------------|
| 15262-20-1 | Ra-228 | 2.27 +/- 0.68 | 1.29 +/- 0.41 | 1.23 | 2.13 | M3 |
| 14391-76-5 | Ag-110m | -0.06 +/- 0.14 | -0.07 +/- 0.12 | 0.07 | 2.13 | U |
| 14682-66-7 | Al-26 | -0.04 +/- 0.13 | 0.05 +/- 0.13 | 0.47 | 2.13 | U |
| 14596-10-2 | Am-241 | 0.04 +/- 0.16 | 0.10 +/- 0.21 | 0.23 | 2.13 | U |
| 13966-02-4 | Be-7 | -0.3 +/- 1.6 | 0.5 +/- 1.2 | 0.37 | 2.13 | U |
| 14913-49-6 | Bi-212 | 2.6 +/- 2.0 | 1.9 +/- 1.5 | 0.25 | 2.13 | U |
| 14733-03-0 | Bi-214 | 1.86 +/- 0.51 | 1.44 +/- 0.36 | 0.68 | 2.13 | J |
| 13982-30-4 | Ce-139 | 0.033 +/- 0.096 | -0.002 +/- 0.066 | 0.29 | 2.13 | U |
| 14762-78-8 | Ce-144 | -0.57 +/- 0.53 | 0.23 +/- 0.43 | 1.17 | 2.13 | U |
| 14093-03-9 | Co-56 | -0.04 +/- 0.50 | 0.66 +/- 0.41 | 1.10 | 2.13 | TI |
| 13981-50-5 | Co-57 | 0.022 +/- 0.063 | 0.003 +/- 0.054 | 0.23 | 2.13 | U |
| 13981-38-9 | Co-58 | -0.07 +/- 0.19 | -0.22 +/- 0.18 | 0.56 | 2.13 | U |
| 10198-40-0 | Co-60 | 0.02 +/- 0.16 | 0.10 +/- 0.15 | 0.40 | 2.13 | U |
| 14392-02-0 | Cr-51 | -2.2 +/- 3.3 | -1.3 +/- 2.0 | 0.25 | 2.13 | U |
| 13967-70-9 | Cs-134 | 0.03 +/- 0.12 | 0.73 +/- 0.94 | 0.74 | 2.13 | U |
| 10045-97-3 | Cs-137 | 0.08 +/- 0.13 | 0.05 +/- 0.11 | 0.17 | 2.13 | U |
| 14683-23-9 | Eu-152 | 0.48 +/- 0.88 | 0.27 +/- 0.67 | 0.19 | 2.13 | U |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 4 of 15

000021

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 102 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041048D10A |
|--|---|--|---|

| | | | | | | |
|------------|---------|----------------|----------------|------|------|-----|
| 15585-10-1 | Eu-154 | 0.33 +/- 0.80 | -0.09 +/- 0.66 | 0.40 | 2.13 | U |
| 14391-16-3 | Eu-155 | -0.08 +/- 0.21 | 0.01 +/- 0.21 | 0.28 | 2.13 | U |
| 14596-12-4 | Fe-59 | 0.44 +/- 0.70 | -0.02 +/- 0.51 | 0.53 | 2.13 | U |
| 10043-66-0 | I-131 | -3.7 +/- 9.3 | 2.0 +/- 6.5 | 0.50 | 2.13 | U |
| 13966-00-2 | K-40 | 29.2 +/- 6.0 | 33.6 +/- 5.0 | 0.56 | 2.13 | |
| 13966-31-9 | Mn-54 | 0.06 +/- 0.15 | -0.09 +/- 0.12 | 0.81 | 2.13 | U |
| 13966-32-0 | Na-22 | 0.02 +/- 0.14 | -0.01 +/- 0.15 | 0.16 | 2.13 | U |
| 14681-63-1 | Nb-94 | -0.03 +/- 0.15 | 0.03 +/- 0.10 | 0.31 | 2.13 | U |
| 13967-76-5 | Nb-95 | -0.10 +/- 0.23 | 0.16 +/- 0.19 | 0.88 | 2.13 | U |
| 15100-28-4 | Pa-234m | 22 +/- 26 | -5 +/- 20 | 0.80 | 2.13 | U |
| 15092-94-1 | Pb-212 | 1.55 +/- 0.35 | 1.34 +/- 0.24 | 0.49 | 2.13 | |
| 15067-28-4 | Pb-214 | 2.35 +/- 0.44 | 1.61 +/- 0.29 | 1.40 | 2.13 | J |
| 13967-48-1 | Ru-106 | 0.2 +/- 1.1 | -0.06 +/- 0.96 | 0.19 | 2.13 | U |
| 14683-10-4 | Sb-124 | -0.02 +/- 0.21 | 0.89 +/- 0.39 | 2.05 | 2.13 | U,W |
| 14234-35-6 | Sb-125 | -0.24 +/- 0.26 | 0.12 +/- 0.19 | 1.10 | 2.13 | U |
| 13967-63-0 | Sc-46 | -0.02 +/- 0.22 | -0.04 +/- 0.16 | 0.09 | 2.13 | U |
| 15623-47-9 | Th-227 | -0.25 +/- 0.78 | -1.46 +/- 0.67 | 1.19 | 2.13 | U |
| 15065-10-8 | Th-234 | 1.8 +/- 1.1 | 2.9 +/- 1.3 | 0.60 | 2.13 | TI |
| 14913-50-9 | Tl-208 | 0.30 +/- 0.17 | 0.41 +/- 0.15 | 0.48 | 2.13 | |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 102 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041048D10A |
| 15117-96-1 | U-235 | 0.31 +/- 0.47 | -0.04 +/- 0.39 |
| 13982-39-3 | Zn-65 | -0.35 +/- 0.37 | 0.35 +/- 0.48 |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 6 of 15

000023

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| |
|-----------------------|
| Field ID: SSED-02 |
| Lab ID: 0405096-12DUP |

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 05-May-04
Date Prepared: 01-Jun-04
Library: KENT_FANP

Prep Batch: GS040601-6
QCBatchID: GS040601-6-1
Run ID: GS040601-6B
Count Time: 1000 minutes
Report Basis: Dry Weight

Final Aliquot: 105 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041131D03A

| CASNO | Analyte | Sample Result +/- 2 s TPU | Duplicate Result +/- 2 s TPU | DER | Control Limit | Lab Qualifiers |
|------------|---------|---------------------------|------------------------------|------|---------------|----------------|
| 15262-20-1 | Ra-228 | 0.76 +/- 0.13 | 0.61 +/- 0.11 | 0.81 | 2.13 | M3 |
| 14391-76-5 | Ag-110m | 0.012 +/- 0.019 | -0.004 +/- 0.026 | 0.51 | 2.13 | U |
| 14682-66-7 | Al-26 | 0.001 +/- 0.016 | -0.001 +/- 0.018 | 0.09 | 2.13 | U |
| 14596-10-2 | Am-241 | 0.036 +/- 0.021 | 0.089 +/- 0.087 | 0.59 | 2.13 | U |
| 13966-02-4 | Be-7 | 0.10 +/- 0.25 | 0.10 +/- 0.26 | 0.00 | 2.13 | U |
| 14913-49-6 | Bi-212 | 0.83 +/- 0.32 | 0.67 +/- 0.28 | 0.39 | 2.13 | |
| 14733-03-0 | Bi-214 | 1.10 +/- 0.15 | 0.90 +/- 0.13 | 1.07 | 2.13 | J |
| 13982-30-4 | Ce-139 | 0.005 +/- 0.012 | -0.008 +/- 0.014 | 0.68 | 2.13 | U |
| 14762-78-8 | Ce-144 | -0.043 +/- 0.071 | 0.013 +/- 0.076 | 0.54 | 2.13 | U |
| 14093-03-9 | Co-56 | 0.203 +/- 0.080 | 0.078 +/- 0.058 | 1.27 | 2.13 | U |
| 13981-50-5 | Co-57 | -0.0037 +/- 0.0091 | 0.005 +/- 0.010 | 0.64 | 2.13 | U |
| 13981-38-9 | Co-58 | -0.015 +/- 0.027 | -0.002 +/- 0.028 | 0.33 | 2.13 | U |
| 10198-40-0 | Co-60 | -0.013 +/- 0.021 | -0.006 +/- 0.022 | 0.24 | 2.13 | U |
| 14392-02-0 | Cr-51 | 0.05 +/- 0.44 | -0.54 +/- 0.45 | 0.94 | 2.13 | U |
| 13967-70-9 | Cs-134 | 0.007 +/- 0.011 | 0.014 +/- 0.015 | 0.39 | 2.13 | U |
| 10045-97-3 | Cs-137 | 0.098 +/- 0.022 | 0.090 +/- 0.022 | 0.24 | 2.13 | |
| 14683-23-9 | Eu-152 | 0.096 +/- 0.073 | 0.04 +/- 0.11 | 0.44 | 2.13 | U |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 7 of 15

000024

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 105 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041131D03A |
|--|---|--|---|

| | | | | | | |
|------------|---------|------------------|------------------|------|------|---|
| 15585-10-1 | Eu-154 | 0.08 +/- 0.16 | -0.01 +/- 0.12 | 0.46 | 2.13 | U |
| 14391-16-3 | Eu-155 | 0.066 +/- 0.037 | 0.045 +/- 0.051 | 0.33 | 2.13 | U |
| 14596-12-4 | Fe-59 | 0.027 +/- 0.097 | -0.043 +/- 0.097 | 0.51 | 2.13 | U |
| 10043-66-0 | I-131 | -0.3 +/- 1.9 | 1.2 +/- 1.9 | 0.58 | 2.13 | U |
| 13966-00-2 | K-40 | 28.1 +/- 3.4 | 27.4 +/- 3.3 | 0.15 | 2.13 | |
| 13966-31-9 | Mn-54 | -0.009 +/- 0.019 | -0.009 +/- 0.021 | 0.01 | 2.13 | U |
| 13966-32-0 | Na-22 | 0 +/- 0.025 | 0.001 +/- 0.026 | 0.04 | 2.13 | U |
| 14681-63-1 | Nb-94 | 0.006 +/- 0.018 | 0.015 +/- 0.019 | 0.35 | 2.13 | U |
| 13967-76-5 | Nb-95 | -0.005 +/- 0.050 | 0.042 +/- 0.043 | 0.72 | 2.13 | U |
| 15100-28-4 | Pa-234m | 3.4 +/- 2.7 | 2.4 +/- 4.3 | 0.20 | 2.13 | U |
| 15092-94-1 | Pb-212 | 0.80 +/- 0.10 | 0.607 +/- 0.084 | 1.45 | 2.13 | W |
| 15067-28-4 | Pb-214 | 1.20 +/- 0.15 | 0.98 +/- 0.13 | 1.10 | 2.13 | J |
| 13967-48-1 | Ru-106 | 0.12 +/- 0.16 | -0.05 +/- 0.17 | 0.73 | 2.13 | U |
| 14683-10-4 | Sb-124 | -0.004 +/- 0.031 | -0.007 +/- 0.033 | 0.04 | 2.13 | U |
| 14234-35-6 | Sb-125 | -0.014 +/- 0.037 | 0.011 +/- 0.040 | 0.44 | 2.13 | U |
| 13967-63-0 | Sc-46 | 0.015 +/- 0.029 | -0.010 +/- 0.030 | 0.61 | 2.13 | U |
| 15623-47-9 | Th-227 | 0.120 +/- 0.083 | 0.2 +/- 1.9 | 0.05 | 2.13 | U |
| 15065-10-8 | Th-234 | 2.25 +/- 0.33 | 2.10 +/- 0.45 | 0.26 | 2.13 | |
| 14913-50-9 | Tl-208 | 0.218 +/- 0.037 | 0.159 +/- 0.038 | 1.11 | 2.13 | |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 8 of 15

000025

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 105 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041131D03A |
|--|---|--|---|

| | | | | | | |
|------------|-------|-----------------|------------------|------|------|---|
| 15117-96-1 | U-235 | 0.121 +/- 0.077 | 0.10 +/- 0.12 | 0.12 | 2.13 | U |
| 13982-39-3 | Zn-65 | 0.018 +/- 0.054 | -0.040 +/- 0.083 | 0.58 | 2.13 | U |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warming Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 9 of 15

000326

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D02A |
|--|---|--|---|

| CASNO | Analyte | Sample Result +/- 2 s TPU | Duplicate Result +/- 2 s TPU | DER | Control Limit | Lab Qualifiers |
|------------|---------|---------------------------|------------------------------|------|---------------|----------------|
| 15262-20-1 | Ra-228 | 0.99 +/- 0.35 | 1.13 +/- 0.30 | 0.30 | 2.13 | M3,G |
| 14391-76-5 | Ag-110m | -0.079 +/- 0.097 | -0.009 +/- 0.087 | 0.54 | 2.13 | U,G |
| 14682-66-7 | Al-26 | 0.027 +/- 0.075 | -0.033 +/- 0.058 | 0.62 | 2.13 | U,G |
| 14596-10-2 | Am-241 | -0.17 +/- 0.51 | -0.52 +/- 0.49 | 0.50 | 2.13 | U,G |
| 13966-02-4 | Be-7 | 0.6 +/- 1.1 | 0.09 +/- 0.87 | 0.34 | 2.13 | U,G |
| 14913-49-6 | Bi-212 | 1.2 +/- 1.1 | 1.66 +/- 0.89 | 0.29 | 2.13 | G |
| 14733-03-0 | Bi-214 | 2.04 +/- 0.36 | 1.97 +/- 0.34 | 0.12 | 2.13 | G,J |
| 13982-30-4 | Ce-139 | -0.043 +/- 0.076 | -0.014 +/- 0.055 | 0.31 | 2.13 | U,G |
| 14762-78-8 | Ce-144 | -0.03 +/- 0.44 | -0.29 +/- 0.36 | 0.46 | 2.13 | U,G |
| 14093-03-9 | Co-56 | 0.27 +/- 0.22 | 0.24 +/- 0.21 | 0.09 | 2.13 | U,G |
| 13981-50-5 | Co-57 | 0.006 +/- 0.057 | -0.024 +/- 0.044 | 0.42 | 2.13 | U,G |
| 13981-38-9 | Co-58 | -0.070 +/- 0.099 | 0.016 +/- 0.087 | 0.65 | 2.13 | U,G |
| 10198-40-0 | Co-60 | -0.036 +/- 0.090 | -0.057 +/- 0.053 | 0.21 | 2.13 | U,G |
| 14392-02-0 | Cr-51 | -0.3 +/- 1.9 | 0.5 +/- 1.5 | 0.31 | 2.13 | U,G |
| 13967-70-9 | Cs-134 | -0.05 +/- 0.81 | 0.052 +/- 0.068 | 0.12 | 2.13 | U,G |
| 10045-97-3 | Cs-137 | 0.74 +/- 0.17 | 0.97 +/- 0.18 | 0.94 | 2.13 | G |
| 14683-23-9 | Eu-152 | 0.44 +/- 0.43 | 0.31 +/- 0.32 | 0.25 | 2.13 | U,G |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 10 of 15

000027

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Date Analyzed: 26-Jun-04 | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D02A |
| 15585-10-1 | Eu-154 | -0.11 +/- 0.37 | -0.25 +/- 0.32 |
| 14391-16-3 | Eu-155 | 0.12 +/- 0.24 | 0.09 |
| 14596-12-4 | Fe-59 | 0.09 +/- 0.31 | 0.17 |
| 10043-66-0 | I-131 | -0.6 +/- 5.8 | 0.38 |
| 13966-00-2 | K-40 | 12.0 +/- 2.4 | 0.08 |
| 13966-31-9 | Mn-54 | 0.023 +/- 0.077 | 0.10 |
| 13966-32-0 | Na-22 | 0.035 +/- 0.087 | 0.20 |
| 14681-63-1 | Nb-94 | -0.076 +/- 0.071 | 0.87 |
| 13967-76-5 | Nb-95 | 0.07 +/- 0.13 | 1.23 |
| 15100-28-4 | Pa-234m | -7 +/- 13 | 0.85 |
| 15092-94-1 | Pb-212 | 1.27 +/- 0.25 | 0.24 |
| 15067-28-4 | Pb-214 | 2.16 +/- 0.35 | 0.28 |
| 13967-48-1 | Ru-106 | 0.22 +/- 0.67 | 0.64 |
| 14683-10-4 | Sb-124 | 0.03 +/- 0.11 | 0.34 |
| 14234-35-6 | Sb-125 | 0.03 +/- 0.19 | 0.14 |
| 13967-63-0 | Sc-46 | -0.08 +/- 0.11 | 0.60 |
| 15623-47-9 | Th-227 | -0.45 +/- 0.66 | 0.98 |
| 15065-10-8 | Th-234 | 1.4 +/- 1.2 | 0.16 |
| 14913-50-9 | Tl-208 | 0.29 +/- 0.11 | 0.17 |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 11 of 15

0000028

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | | |
|--|---|--|--|-----------------------|
| Field ID: SSED-03 Lab ID: 0405096-13DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Date Analyzed: 26-Jun-04 | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g Report Basis: Dry Weight | File Name: 041075D02A |
| 15117-96-1 | U-235 | 0.22 +/- 0.40 | 0.24 +/- 0.34 | 0.02 |
| 13982-39-3 | Zn-65 | 0.05 +/- 0.40 | 0 +/- 0.37 | 0.09 |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 12 of 15

000023

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D03A |
|--|---|--|---|

| CASNO | Analyte | Sample Result +/- 2s TPU | Duplicate Result +/- 2s TPU | DER | Control Limit | Lab Qualifiers |
|------------|---------|--------------------------|-----------------------------|------|---------------|----------------|
| 15262-20-1 | Ra-228 | 9.1 +/- 1.3 | 9.5 +/- 1.3 | 0.26 | 2.13 | M3,G |
| 14391-76-5 | Ag-110m | -0.05 +/- 0.19 | -0.10 +/- 0.20 | 0.19 | 2.13 | U,G |
| 14682-66-7 | Al-26 | 0.02 +/- 0.10 | 0.06 +/- 0.13 | 0.21 | 2.13 | U,G |
| 14596-10-2 | Am-241 | 0.49 +/- 0.29 | 0.4 +/- 1.1 | 0.06 | 2.13 | U,G |
| 13966-02-4 | Be-7 | 1.9 +/- 1.9 | -0.4 +/- 2.0 | 0.84 | 2.13 | U,G |
| 14913-49-6 | Bi-212 | 7.8 +/- 2.4 | 11.7 +/- 2.9 | 1.04 | 2.13 | G |
| 14733-03-0 | Bi-214 | 6.6 +/- 1.4 | 5.8 +/- 1.4 | 0.38 | 2.13 | G,J |
| 13982-30-4 | Ce-139 | -0.14 +/- 0.13 | -0.06 +/- 0.15 | 0.36 | 2.13 | U,G |
| 14762-78-8 | Ce-144 | 0.25 +/- 0.71 | 0.73 +/- 0.91 | 0.42 | 2.13 | U,G |
| 14093-03-9 | Co-56 | 0.71 +/- 0.37 | 0.92 +/- 0.44 | 0.37 | 2.13 | G,TL |
| 13981-50-5 | Co-57 | -0.012 +/- 0.088 | 0 +/- 0.12 | 0.11 | 2.13 | U,G |
| 13981-38-9 | Co-58 | 0.01 +/- 0.18 | -0.17 +/- 0.19 | 0.67 | 2.13 | U,G |
| 10198-40-0 | Co-60 | -0.02 +/- 0.11 | 0.01 +/- 0.15 | 0.17 | 2.13 | U,G |
| 14392-02-0 | Cr-51 | 2.5 +/- 3.0 | -2.1 +/- 3.6 | 0.98 | 2.13 | U,G |
| 13967-70-9 | Cs-134 | 0.186 +/- 0.096 | 0.20 +/- 0.11 | 0.11 | 2.13 | U,G |
| 10045-97-3 | Cs-137 | 0.96 +/- 0.22 | 0.70 +/- 0.20 | 0.86 | 2.13 | G |
| 14683-23-9 | Eu-152 | 0.38 +/- 0.61 | 0.13 +/- 0.72 | 0.26 | 2.13 | U,G |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halfives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 13 of 15

000030

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D03A |
| 15585-10-1 | Eu-154 | -0.37 +/- 0.64 | 0.04 +/- 0.70 |
| 14391-16-3 | Eu-155 | 0.78 +/- 0.49 | 0.53 +/- 0.55 |
| 14596-12-4 | Fe-59 | -0.61 +/- 0.46 | 0.13 +/- 0.52 |
| 10043-66-0 | I-131 | -0.6 +/- 7.4 | 5.6 +/- 8.6 |
| 13966-00-2 | K-40 | 29.1 +/- 4.7 | 28.0 +/- 4.6 |
| 13966-31-9 | Mn-54 | 0.07 +/- 0.15 | 0.06 +/- 0.15 |
| 13966-32-0 | Na-22 | 0.05 +/- 0.13 | -0.09 +/- 0.17 |
| 14681-63-1 | Nb-94 | -0.04 +/- 0.12 | 0.01 +/- 0.14 |
| 13967-76-5 | Nb-95 | -0.09 +/- 0.33 | -0.24 +/- 0.38 |
| 15100-28-4 | Pa-234m | 23 +/- 20 | -4 +/- 22 |
| 15092-94-1 | Pb-212 | 10.0 +/- 1.3 | 10.2 +/- 1.3 |
| 15067-28-4 | Pb-214 | 7.24 +/- 0.95 | 7.50 +/- 0.99 |
| 13967-48-1 | Ru-106 | 0 +/- 1.1 | -1.5 +/- 1.3 |
| 14683-10-4 | Sb-124 | 0.06 +/- 0.21 | 0.25 +/- 0.23 |
| 14234-35-6 | Sb-125 | 0.07 +/- 0.33 | 0.21 +/- 0.38 |
| 13967-63-0 | Sc-46 | -0.14 +/- 0.17 | 0 +/- 0.18 |
| 15623-47-9 | Th-227 | 0.48 +/- 0.70 | 4 +/- 24 |
| 15065-10-8 | Th-234 | 12.5 +/- 2.3 | 11.6 +/- 3.3 |
| 14913-50-9 | Tl-208 | 3.04 +/- 0.44 | 2.98 +/- 0.44 |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 14 of 15

000031

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D03A |
| 15117-96-1 | U-235 | 0.34 +/- 0.66 | 0.58 +/- 0.53 0.28 2.13 U,G |
| 13982-39-3 | Zn-65 | 0.05 +/- 0.40 | -0.24 +/- 0.53 0.43 2.13 U,G |

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 15 of 15

000031

PARAGON ANALYTICS
Radiochemistry Data Package

3

Section 3

**INDIVIDUAL
SAMPLE RESULTS**

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-01 Lab ID: 0405096-1 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 03-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 55.2 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041132D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.25 +/- 0.21 | 0.35 | U,M,G |
| 14391-76-5 | Ag-110m | -0.080 +/- 0.043 | 0.072 | U,G |
| 14682-66-7 | Al-26 | 0.024 +/- 0.035 | 0.057 | U,G |
| 14596-10-2 | Am-241 | -0.047 +/- 0.047 | 0.079 | U,G |
| 13966-02-4 | Be-7 | 0.46 +/- 0.32 | 0.52 | U,G |
| 14913-49-6 | Bi-212 | 0.41 +/- 0.33 | 0.54 | U,G |
| 14733-03-0 | Bi-214 | 0.14 +/- 0.15 | 0.24 | U,G,J |
| 13982-30-4 | Ce-139 | -0.007 +/- 0.016 | 0.027 | U,G |
| 14762-78-8 | Ce-144 | -0.051 +/- 0.095 | 0.159 | U,G |
| 14093-03-9 | Co-56 | 0.05 +/- 0.14 | 0.24 | U,G |
| 13981-50-5 | Co-57 | 0 +/- 0.012 | 0.020 | U,G |
| 13981-38-9 | Co-58 | 0.022 +/- 0.059 | 0.098 | U,G |
| 10198-40-0 | Co-60 | 0.020 +/- 0.032 | 0.053 | U,G |
| 14392-02-0 | Cr-51 | -0.03 +/- 0.53 | 0.89 | U,G |
| 13967-70-9 | Cs-134 | -0.012 +/- 0.042 | 0.069 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-01 Lab ID: 0405096-1 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 03-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 55.2 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041132D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.302 +/- 0.048 | 0.048 | G |
| 14683-23-9 | Eu-152 | 0.10 +/- 0.17 | 0.27 | U,G |
| 15585-10-1 | Eu-154 | 0.07 +/- 0.15 | 0.25 | U,G |
| 14391-16-3 | Eu-155 | 0.046 +/- 0.046 | 0.075 | U,G |
| 14596-12-4 | Fe-59 | 0.01 +/- 0.13 | 0.21 | U,G |
| 10043-66-0 | I-131 | 0.9 +/- 2.6 | 4.4 | U,G |
| 13966-00-2 | K-40 | 6.7 +/- 1.1 | 1.3 | G |
| 13966-31-9 | Mn-54 | 0.008 +/- 0.029 | 0.048 | U,G |
| 13966-32-0 | Na-22 | -0.030 +/- 0.035 | 0.058 | U,G |
| 14681-63-1 | Nb-94 | 0.011 +/- 0.038 | 0.063 | U,G |
| 13967-76-5 | Nb-95 | -0.053 +/- 0.061 | 0.103 | U,G |
| 15100-28-4 | Pa-234m | 4.9 +/- 4.6 | 7.4 | U,G |
| 15092-94-1 | Pb-212 | 0.111 +/- 0.063 | 0.100 | G |
| 15067-28-4 | Pb-214 | 0.14 +/- 0.11 | 0.18 | U,G,J |
| 13967-48-1 | Ru-106 | 0.12 +/- 0.25 | 0.42 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-01 Lab ID: 0405096-1 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 03-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 55.2 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041132D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | -0.02 +/- 0.22 | 0.36 | U,G |
| 14234-35-6 | Sb-125 | 0.046 +/- 0.052 | 0.086 | U,G |
| 13967-63-0 | Sc-46 | -0.030 +/- 0.041 | 0.070 | U,G |
| 15623-47-9 | Th-227 | -0.37 +/- 0.14 | 0.23 | U,G |
| 15065-10-8 | Th-234 | 0.59 +/- 0.58 | 0.95 | U,G |
| 14913-50-9 | Tl-208 | 0.053 +/- 0.054 | 0.089 | U,G |
| 15117-96-1 | U-235 | 0.04 +/- 0.17 | 0.28 | U,G |
| 13982-39-3 | Zn-65 | 0.13 +/- 0.10 | 0.16 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 3 of 87

000033

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|---|---|
| Field ID: MSED-02 Lab ID: 0405096-2 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes Report Basis: Dry Weight | Final Aliquot: 223 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041507D01A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.164 +/- 0.082 | 0.147 | LT,G |
| 14391-76-5 | Ag-110m | -0.064 +/- 0.025 | 0.043 | U,G |
| 14682-66-7 | Al-26 | -0.009 +/- 0.014 | 0.024 | U,G |
| 14596-10-2 | Am-241 | 0.042 +/- 0.091 | 0.149 | U,G |
| 13966-02-4 | Be-7 | 0.15 +/- 0.22 | 0.37 | U,G |
| 14913-49-6 | Bi-212 | 0.45 +/- 0.25 | 0.39 | G |
| 14733-03-0 | Bi-214 | 0.23 +/- 0.10 | 0.19 | G,J |
| 13982-30-4 | Ce-139 | -0.001 +/- 0.016 | 0.026 | U,G |
| 14762-78-8 | Ce-144 | -0.06 +/- 0.10 | 0.17 | U,G |
| 14093-03-9 | Co-56 | 0.047 +/- 0.033 | 0.052 | U,G |
| 13981-50-5 | Co-57 | 0.010 +/- 0.013 | 0.021 | U,G |
| 13981-38-9 | Co-58 | 0.018 +/- 0.021 | 0.035 | U,G |
| 10198-40-0 | Co-60 | -0.005 +/- 0.016 | 0.027 | U,G |
| 14392-02-0 | Cr-51 | 0.07 +/- 0.39 | 0.65 | U,G |
| 13967-70-9 | Cs-134 | 0.06 +/- 0.18 | 0.30 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 4 of 87

00003?

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|---|---|
| Field ID: MSED-02 Lab ID: 0405096-2 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes Report Basis: Dry Weight | Final Aliquot: 223 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041507D01A |
|--|---|---|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.249 +/- 0.035 | 0.024 | G |
| 14683-23-9 | Eu-152 | -0.026 +/- 0.071 | 0.122 | U,G |
| 15585-10-1 | Eu-154 | -0.09 +/- 0.12 | 0.20 | U,G |
| 14391-16-3 | Eu-155 | -0.012 +/- 0.053 | 0.088 | U,G |
| 14596-12-4 | Fe-59 | 0.019 +/- 0.058 | 0.096 | U,G |
| 10043-66-0 | I-131 | 0.3 +/- 1.2 | 1.9 | U,G |
| 13966-00-2 | K-40 | 9.5 +/- 1.2 | 0.6 | G |
| 13966-31-9 | Mn-54 | -0.010 +/- 0.031 | 0.052 | U,G |
| 13966-32-0 | Na-22 | -0.003 +/- 0.016 | 0.027 | U,G |
| 14681-63-1 | Nb-94 | -0.009 +/- 0.016 | 0.027 | U,G |
| 13967-76-5 | Nb-95 | 0.050 +/- 0.025 | 0.039 | G,TI |
| 15100-28-4 | Pa-234m | 3.0 +/- 1.9 | 3.0 | U,G |
| 15092-94-1 | Pb-212 | 0.208 +/- 0.049 | 0.067 | G |
| 15067-28-4 | Pb-214 | 0.339 +/- 0.060 | 0.086 | G,J |
| 13967-48-1 | Ru-106 | -0.05 +/- 0.17 | 0.29 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 5 of 87

000033

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|---|---|
| Field ID: MSED-02 Lab ID: 0405096-2 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes Report Basis: Dry Weight | Final Aliquot: 223 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041507D01A |
|--|---|---|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | 0.08 +/- 0.10 | 0.17 | U,G |
| 14234-35-6 | Sb-125 | 0.031 +/- 0.036 | 0.068 | U,G |
| 13967-63-0 | Sc-46 | -0.014 +/- 0.021 | 0.036 | U,G |
| 15623-47-9 | Th-227 | 0.30 +/- 0.12 | 0.19 | G, TI |
| 15065-10-8 | Th-234 | 1.36 +/- 0.48 | 0.74 | G, TI |
| 14913-50-9 | Tl-208 | 0.056 +/- 0.029 | 0.048 | G |
| 15117-96-1 | U-235 | 0.13 +/- 0.13 | 0.21 | U,G |
| 13982-39-3 | Zn-65 | -0.020 +/- 0.051 | 0.086 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 6 of 87

000033

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-03 Lab ID: 0405096-3 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 04-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 69.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041134D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 15262-20-1 | Ra-228 | 0.30 +/- 0.15 | 0.29 | M3,G |
| 14391-76-5 | Ag-110m | -0.036 +/- 0.033 | 0.056 | U,G |
| 14682-66-7 | Al-26 | -0.012 +/- 0.029 | 0.048 | U,G |
| 14596-10-2 | Am-241 | -0.007 +/- 0.038 | 0.064 | U,G |
| 13966-02-4 | Be-7 | 0.35 +/- 0.26 | 0.42 | U,G |
| 14913-49-6 | Bi-212 | 0.30 +/- 0.35 | 0.57 | U,G |
| 14733-03-0 | Bi-214 | -0.01 +/- 0.12 | 0.20 | U,G,J |
| 13982-30-4 | Ce-139 | 0.003 +/- 0.013 | 0.021 | U,G |
| 14762-78-8 | Ce-144 | -0.023 +/- 0.077 | 0.129 | U,G |
| 14093-03-9 | Co-56 | 0.03 +/- 0.12 | 0.19 | U,G |
| 13981-50-5 | Co-57 | -0.0001 +/- 0.0099 | 0.0166 | U,G |
| 13981-38-9 | Co-58 | -0.005 +/- 0.050 | 0.084 | U,G |
| 10198-40-0 | Co-60 | 0.022 +/- 0.027 | 0.044 | U,G |
| 14392-02-0 | Cr-51 | -0.18 +/- 0.44 | 0.74 | U,G |
| 13967-70-9 | Cs-134 | -0.013 +/- 0.033 | 0.055 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-03 Lab ID: 0405096-3 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 04-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 69.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041134D10A |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.073 +/- 0.025 | 0.037 | G |
| 14683-23-9 | Eu-152 | -0.02 +/- 0.14 | 0.23 | U,G |
| 15585-10-1 | Eu-154 | -0.25 +/- 0.19 | 0.32 | U,G |
| 14391-16-3 | Eu-155 | 0.023 +/- 0.038 | 0.063 | U,G |
| 14596-12-4 | Fe-59 | 0.05 +/- 0.11 | 0.18 | U,G |
| 10043-66-0 | I-131 | 0.1 +/- 2.2 | 3.7 | U,G |
| 13966-00-2 | K-40 | 9.9 +/- 1.4 | 1.0 | G |
| 13966-31-9 | Mn-54 | -0.038 +/- 0.025 | 0.042 | U,G |
| 13966-32-0 | Na-22 | -0.005 +/- 0.028 | 0.046 | U,G |
| 14681-63-1 | Nb-94 | 0.013 +/- 0.031 | 0.050 | U,G |
| 13967-76-5 | Nb-95 | -0.048 +/- 0.051 | 0.086 | U,G |
| 15100-28-4 | Pa-234m | 3.4 +/- 3.1 | 5.1 | U,G |
| 15092-94-1 | Pb-212 | 0.159 +/- 0.053 | 0.080 | G |
| 15067-28-4 | Pb-214 | 0.197 +/- 0.078 | 0.149 | G,J |
| 13967-48-1 | Ru-106 | 0.11 +/- 0.20 | 0.34 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-03 Lab ID: 0405096-3 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 04-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 69.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041134D10A |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | -0.40 +/- 0.17 | 0.28 | U,G |
| 14234-35-6 | Sb-125 | 0.028 +/- 0.041 | 0.068 | U,G |
| 13967-63-0 | Sc-46 | -0.054 +/- 0.035 | 0.059 | U,G |
| 15623-47-9 | Th-227 | 0.37 +/- 0.10 | 0.14 | G, TI |
| 15065-10-8 | Th-234 | 0.63 +/- 0.40 | 0.74 | U,G |
| 14913-50-9 | Tl-208 | 0.049 +/- 0.039 | 0.070 | U,G |
| 15117-96-1 | U-235 | 0.03 +/- 0.13 | 0.21 | U,G |
| 13982-39-3 | Zn-65 | -0.074 +/- 0.092 | 0.155 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|--|---|---|
| Field ID: MSED-04 Lab ID: 0405096-4 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP+Pa | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes Report Basis: Dry Weight | Final Aliquot: 407 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041080D02A |
|--|--|---|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 1.74 +/- 0.22 | 0.11 | |
| 14391-76-5 | Ag-110m | 0.012 +/- 0.020 | 0.035 | U |
| 14682-66-7 | Al-26 | 0 +/- 0.012 | 0.021 | U |
| 14596-10-2 | Am-241 | 0.14 +/- 0.13 | 0.21 | U |
| 13966-02-4 | Be-7 | 0.09 +/- 0.20 | 0.33 | U |
| 14913-49-6 | Bi-212 | 2.41 +/- 0.39 | 0.36 | |
| 14733-03-0 | Bi-214 | 2.26 +/- 0.27 | 0.07 | J |
| 13982-30-4 | Ce-139 | 0.006 +/- 0.014 | 0.023 | U |
| 14762-78-8 | Ce-144 | 0.022 +/- 0.088 | 0.147 | U |
| 14093-03-9 | Co-56 | 0.096 +/- 0.088 | 0.141 | U |
| 13981-50-5 | Co-57 | 0.003 +/- 0.011 | 0.019 | U |
| 13981-38-9 | Co-58 | -0.010 +/- 0.020 | 0.035 | U |
| 10198-40-0 | Co-60 | 0.007 +/- 0.015 | 0.024 | U |
| 14392-02-0 | Cr-51 | -0.22 +/- 0.37 | 0.62 | U |
| 13967-70-9 | Cs-134 | -0.007 +/- 0.014 | 0.023 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|--|---|---|
| Field ID: MSED-04 Lab ID: 0405096-4 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP+Pa | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes Report Basis: Dry Weight | Final Aliquot: 407 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041080D02A |
|--|--|---|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.160 +/- 0.027 | 0.026 | |
| 14683-23-9 | Eu-152 | 0.17 +/- 0.11 | 0.17 | TI |
| 15585-10-1 | Eu-154 | -0.03 +/- 0.11 | 0.18 | U |
| 14391-16-3 | Eu-155 | 0.063 +/- 0.056 | 0.092 | U |
| 14596-12-4 | Fe-59 | -0.041 +/- 0.059 | 0.102 | U |
| 10043-66-0 | I-131 | -0.8 +/- 1.1 | 1.9 | U |
| 13966-00-2 | K-40 | 14.1 +/- 1.7 | 0.3 | |
| 13966-31-9 | Mn-54 | 0.021 +/- 0.012 | 0.018 | |
| 13966-32-0 | Na-22 | 0.003 +/- 0.016 | 0.027 | U |
| 14681-63-1 | Nb-94 | 0.020 +/- 0.015 | 0.024 | U |
| 13967-76-5 | Nb-95 | -0.053 +/- 0.040 | 0.068 | U |
| 15100-28-4 | Pa-234m | 6.7 +/- 2.6 | 3.7 | |
| 15092-94-1 | Pb-212 | 2.23 +/- 0.27 | 0.05 | |
| 15067-28-4 | Pb-214 | 2.48 +/- 0.30 | 0.06 | J |
| 13967-48-1 | Ru-106 | 0.08 +/- 0.13 | 0.22 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|--|---|---|
| Field ID: MSED-04 Lab ID: 0405096-4 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP+Pa | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 600 minutes Report Basis: Dry Weight | Final Aliquot: 407 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041080D02A |
|--|--|---|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | 0.009 +/- 0.023 | 0.039 | U |
| 14234-35-6 | Sb-125 | 0.010 +/- 0.040 | 0.067 | U |
| 13967-63-0 | Sc-46 | -0.009 +/- 0.021 | 0.035 | U |
| 15623-47-9 | Th-227 | 0.30 +/- 0.13 | 0.20 | |
| 15065-10-8 | Th-234 | 3.16 +/- 0.50 | 0.53 | |
| 14913-50-9 | Tl-208 | 0.633 +/- 0.079 | 0.033 | |
| 15117-96-1 | U-235 | 0.21 +/- 0.10 | 0.18 | |
| 13982-39-3 | Zn-65 | -0.037 +/- 0.054 | 0.093 | U |
| 14331-85-2 | Pa-231 | -0.20 +/- 0.44 | 0.73 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-05 Lab ID: 0405096-5 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 342 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041059D08A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 3.44 +/- 0.61 | 0.64 | M3,G |
| 14391-76-5 | Ag-110m | 0.002 +/- 0.090 | 0.164 | U,G |
| 14682-66-7 | Al-26 | -0.036 +/- 0.065 | 0.155 | U,G |
| 14596-10-2 | Am-241 | 0.12 +/- 0.23 | 0.38 | U,G |
| 13966-02-4 | Be-7 | 1.0 +/- 1.4 | 2.3 | U,G |
| 14913-49-6 | Bi-212 | 5.0 +/- 1.7 | 1.9 | G |
| 14733-03-0 | Bi-214 | 3.40 +/- 0.54 | 0.29 | G,J |
| 13982-30-4 | Ce-139 | 0.014 +/- 0.093 | 0.159 | U,G |
| 14762-78-8 | Ce-144 | -0.10 +/- 0.50 | 0.88 | U,G |
| 14093-03-9 | Co-56 | 0.44 +/- 0.30 | 0.45 | U,G |
| 13981-50-5 | Co-57 | 0.018 +/- 0.060 | 0.103 | U,G |
| 13981-38-9 | Co-58 | 0.02 +/- 0.14 | 0.25 | U,G |
| 10198-40-0 | Co-60 | -0.02 +/- 0.11 | 0.21 | U,G |
| 14392-02-0 | Cr-51 | -0.4 +/- 2.1 | 3.9 | U,G |
| 13967-70-9 | Cs-134 | 0.078 +/- 0.070 | 0.158 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-05 Lab ID: 0405096-5 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 342 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041059D08A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.134 +/- 0.095 | 0.141 | U,G |
| 14683-23-9 | Eu-152 | 0.39 +/- 0.52 | 0.85 | U,G |
| 15585-10-1 | Eu-154 | -0.45 +/- 0.57 | 1.13 | U,G |
| 14391-16-3 | Eu-155 | 0.21 +/- 0.24 | 0.40 | U,G |
| 14596-12-4 | Fe-59 | -0.20 +/- 0.32 | 0.66 | U,G |
| 10043-66-0 | I-131 | 1.4 +/- 6.1 | 10.7 | U,G |
| 13966-00-2 | K-40 | 16.5 +/- 3.1 | 1.5 | G |
| 13966-31-9 | Mn-54 | -0.03 +/- 0.11 | 0.20 | U,G |
| 13966-32-0 | Na-22 | -0.06 +/- 0.10 | 0.21 | U,G |
| 14681-63-1 | Nb-94 | -0.036 +/- 0.098 | 0.181 | U,G |
| 13967-76-5 | Nb-95 | -0.03 +/- 0.17 | 0.31 | U,G |
| 15100-28-4 | Pa-234m | 16 +/- 19 | 30 | U,G |
| 15092-94-1 | Pb-212 | 4.26 +/- 0.60 | 0.26 | G |
| 15067-28-4 | Pb-214 | 3.94 +/- 0.56 | 0.27 | G,J |
| 13967-48-1 | Ru-106 | -0.48 +/- 0.88 | 1.67 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-05 Lab ID: 0405096-5 Library: KENT_FANP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 342 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041059D08A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 0.04 +/- 0.15 | 0.27 | U,G |
| 14234-35-6 | Sb-125 | 0.26 +/- 0.24 | 0.44 | U,G |
| 13967-63-0 | Sc-46 | -0.05 +/- 0.14 | 0.27 | U,G |
| 15623-47-9 | Th-227 | 0.07 +/- 0.52 | 0.90 | U,G |
| 15065-10-8 | Th-234 | 8.0 +/- 1.7 | 2.6 | G |
| 14913-50-9 | Tl-208 | 1.22 +/- 0.23 | 0.16 | G |
| 15117-96-1 | U-235 | -0.16 +/- 0.47 | 0.83 | U,G |
| 13982-39-3 | Zn-65 | 0.33 +/- 0.51 | 0.84 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Date Analyzed: 20-Jul-04 Library: KENT_FANP | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 383 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041253D08A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.77 +/- 0.26 | 0.46 | M3,G |
| 14391-76-5 | Ag-110m | 0.028 +/- 0.070 | 0.123 | U,G |
| 14682-66-7 | Al-26 | -0.010 +/- 0.056 | 0.124 | U,G |
| 14596-10-2 | Am-241 | 0 +/- 0.11 | 0.19 | U,G |
| 13966-02-4 | Be-7 | 0.3 +/- 1.0 | 1.8 | U,G |
| 14913-49-6 | Bi-212 | 1.4 +/- 1.1 | 1.5 | U,G |
| 14733-03-0 | Bi-214 | 0.63 +/- 0.20 | 0.21 | G,J |
| 13982-30-4 | Ce-139 | 0.028 +/- 0.057 | 0.096 | U,G |
| 14762-78-8 | Ce-144 | -0.07 +/- 0.26 | 0.49 | U,G |
| 14093-03-9 | Co-56 | 0.25 +/- 0.24 | 0.38 | U,G |
| 13981-50-5 | Co-57 | -0.009 +/- 0.037 | 0.067 | U,G |
| 13981-38-9 | Co-58 | 0 +/- 0.12 | 0.22 | U,G |
| 10198-40-0 | Co-60 | 0.028 +/- 0.055 | 0.098 | U,G |
| 14392-02-0 | Cr-51 | -0.9 +/- 2.5 | 4.8 | U,G |
| 13967-70-9 | Cs-134 | 0.013 +/- 0.069 | 0.122 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|--|---|--|
| Field ID: MSED-06 Lab ID: 0405096-6 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Date Analyzed: 20-Jul-04 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 383 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041253D08A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.011 +/- 0.064 | 0.117 | U,G |
| 14683-23-9 | Eu-152 | -0.09 +/- 0.32 | 0.67 | U,G |
| 15585-10-1 | Eu-154 | -0.22 +/- 0.35 | 0.74 | U,G |
| 14391-16-3 | Eu-155 | 0.06 +/- 0.13 | 0.21 | U,G |
| 14596-12-4 | Fe-59 | 0.32 +/- 0.38 | 0.60 | U,G |
| 10043-66-0 | I-131 | 9 +/- 29 | 52 | U,G |
| 13966-00-2 | K-40 | 12.4 +/- 2.5 | 1.2 | G |
| 13966-31-9 | Mn-54 | -0.012 +/- 0.060 | 0.120 | U,G |
| 13966-32-0 | Na-22 | -0.013 +/- 0.066 | 0.135 | U,G |
| 14681-63-1 | Nb-94 | -0.005 +/- 0.073 | 0.134 | U,G |
| 13967-76-5 | Nb-95 | 0.13 +/- 0.14 | 0.23 | U,G |
| 15100-28-4 | Pa-234m | 9 +/- 11 | 17 | U,G |
| 15092-94-1 | Pb-212 | 0.81 +/- 0.18 | 0.16 | G |
| 15067-28-4 | Pb-214 | 0.78 +/- 0.18 | 0.19 | G,J |
| 13967-48-1 | Ru-106 | -0.13 +/- 0.67 | 1.26 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Date Analyzed: 20-Jul-04 Library: KENT_FANP | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 383 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041253D08A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.01 +/- 0.15 | 0.28 | U,G |
| 14234-35-6 | Sb-125 | 0 +/- 0.15 | 0.28 | U,G |
| 13967-63-0 | Sc-46 | -0.01 +/- 0.11 | 0.21 | U,G |
| 15623-47-9 | Th-227 | -0.03 +/- 0.29 | 0.53 | U,G |
| 15065-10-8 | Th-234 | 0.73 +/- 0.77 | 1.24 | U,G |
| 14913-50-9 | Tl-208 | 0.30 +/- 0.10 | 0.11 | G |
| 15117-96-1 | U-235 | 0.04 +/- 0.26 | 0.45 | U,G |
| 13982-39-3 | Zn-65 | -0.26 +/- 0.23 | 0.48 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 18 of 87

000051

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 388 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041254D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.58 +/- 0.24 | 0.36 | M3,G |
| 14391-76-5 | Ag-110m | 0.017 +/- 0.052 | 0.094 | U,G |
| 14682-66-7 | Al-26 | -0.060 +/- 0.075 | 0.172 | U,G |
| 14596-10-2 | Am-241 | -0.03 +/- 0.11 | 0.19 | U,G |
| 13966-02-4 | Be-7 | -0.66 +/- 0.90 | 1.89 | U,G |
| 14913-49-6 | Bi-212 | 1.13 +/- 0.92 | 1.36 | U,G |
| 14733-03-0 | Bi-214 | 0.54 +/- 0.17 | 0.21 | G,J |
| 13982-30-4 | Ce-139 | 0.025 +/- 0.056 | 0.095 | U,G |
| 14762-78-8 | Ce-144 | -0.07 +/- 0.28 | 0.52 | U,G |
| 14093-03-9 | Co-56 | 0.05 +/- 0.27 | 0.48 | U,G |
| 13981-50-5 | Co-57 | -0.022 +/- 0.035 | 0.066 | U,G |
| 13981-38-9 | Co-58 | -0.031 +/- 0.086 | 0.182 | U,G |
| 10198-40-0 | Co-60 | -0.052 +/- 0.057 | 0.134 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 388 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041254D08A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14392-02-0 | Cr-51 | 1.8 +/- 2.6 | 4.2 | U,G |
| 13967-70-9 | Cs-134 | -0.015 +/- 0.068 | 0.127 | U,G |
| 10045-97-3 | Cs-137 | -0.030 +/- 0.053 | 0.110 | U,G |
| 14683-23-9 | Eu-152 | 0.08 +/- 0.29 | 0.54 | U,G |
| 15585-10-1 | Eu-154 | 0.09 +/- 0.27 | 0.50 | U,G |
| 14391-16-3 | Eu-155 | 0.06 +/- 0.13 | 0.22 | U,G |
| 14596-12-4 | Fe-59 | -0.14 +/- 0.36 | 0.74 | U,G |
| 10043-66-0 | I-131 | -11 +/- 27 | 52 | U,G |
| 13966-00-2 | K-40 | 9.7 +/- 2.2 | 1.5 | G |
| 13966-31-9 | Mn-54 | -0.018 +/- 0.079 | 0.151 | U,G |
| 13966-32-0 | Na-22 | -0.015 +/- 0.073 | 0.145 | U,G |
| 14681-63-1 | Nb-94 | 0.018 +/- 0.063 | 0.112 | U,G |
| 13967-76-5 | Nb-95 | 0.05 +/- 0.12 | 0.22 | U,G |

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 2 of 15

000053

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: MSED-06 Lab ID: 0405096-6DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 20-Jul-04 Date Analyzed: 21-Jul-04 | Prep Batch: GS040720-2 QCBatchID: GS040720-2-1 Run ID: GS040720-2A Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 388 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041254D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15100-28-4 | Pa-234m | -1.1 +/- 8.6 | 17.2 | U,G |
| 15092-94-1 | Pb-212 | 0.66 +/- 0.16 | 0.16 | G |
| 15067-28-4 | Pb-214 | 0.69 +/- 0.16 | 0.20 | G,J |
| 13967-48-1 | Ru-106 | 0.30 +/- 0.60 | 1.03 | U,G |
| 14683-10-4 | Sb-124 | 0.05 +/- 0.15 | 0.26 | U,G |
| 14234-35-6 | Sb-125 | 0.01 +/- 0.13 | 0.23 | U,G |
| 13967-63-0 | Sc-46 | 0 +/- 0.13 | 0.24 | U,G |
| 15623-47-9 | Th-227 | 0.05 +/- 0.30 | 0.52 | U,G |
| 15065-10-8 | Th-234 | 1.06 +/- 0.86 | 1.37 | U,G |
| 14913-50-9 | Tl-208 | 0.208 +/- 0.082 | 0.092 | G |
| 15117-96-1 | U-235 | 0.02 +/- 0.26 | 0.46 | U,G |
| 13982-39-3 | Zn-65 | 0.23 +/- 0.31 | 0.51 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-07 Lab ID: 0405096-7 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 37.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041141D04B |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 32.6 +/- 4.6 | 3.6 | M3,G |
| 14391-76-5 | Ag-110m | -0.09 +/- 0.47 | 0.85 | U,G |
| 14682-66-7 | Al-26 | -0.07 +/- 0.56 | 1.06 | U,G |
| 14596-10-2 | Am-241 | 0.4 +/- 2.2 | 3.8 | U,G |
| 13966-02-4 | Be-7 | -1.0 +/- 6.8 | 12.0 | U,G |
| 14913-49-6 | Bi-212 | 41 +/- 11 | 11 | G |
| 14733-03-0 | Bi-214 | 31.1 +/- 4.3 | 1.8 | G,J |
| 13982-30-4 | Ce-139 | -0.31 +/- 0.36 | 0.64 | U,G |
| 14762-78-8 | Ce-144 | -1.2 +/- 2.2 | 3.8 | U,G |
| 14093-03-9 | Co-56 | 5.5 +/- 1.9 | 2.2 | G,TL |
| 13981-50-5 | Co-57 | 0.06 +/- 0.29 | 0.49 | U,G |
| 13981-38-9 | Co-58 | -0.41 +/- 0.68 | 1.30 | U,G |
| 10198-40-0 | Co-60 | 0.08 +/- 0.48 | 0.87 | U,G |
| 14392-02-0 | Cr-51 | 0 +/- 9.6 | 16.7 | U,G |
| 13967-70-9 | Cs-134 | 0.67 +/- 0.39 | 0.80 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-07 Lab ID: 0405096-7 Library: KENT_FANP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 37.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041141D04B |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.08 +/- 0.45 | 0.79 | U,G |
| 14683-23-9 | Eu-152 | 3.8 +/- 3.4 | 5.3 | U,G |
| 15585-10-1 | Eu-154 | -1.7 +/- 2.3 | 4.6 | U,G |
| 14391-16-3 | Eu-155 | 1.6 +/- 1.6 | 2.5 | U,G |
| 14596-12-4 | Fe-59 | -1.2 +/- 1.7 | 3.3 | U,G |
| 10043-66-0 | I-131 | -26 +/- 33 | 60 | U,G |
| 13966-00-2 | K-40 | 10.4 +/- 6.6 | 9.5 | G, TI |
| 13966-31-9 | Mn-54 | -0.16 +/- 0.56 | 1.02 | U,G |
| 13966-32-0 | Na-22 | 0.01 +/- 0.49 | 0.89 | U,G |
| 14681-63-1 | Nb-94 | -0.05 +/- 0.42 | 0.75 | U,G |
| 13967-76-5 | Nb-95 | -0.9 +/- 1.3 | 2.5 | U,G |
| 15100-28-4 | Pa-234m | 39 +/- 72 | 123 | U,G |
| 15092-94-1 | Pb-212 | 34.9 +/- 4.4 | 1.2 | G |
| 15067-28-4 | Pb-214 | 36.5 +/- 4.6 | 1.4 | G,J |
| 13967-48-1 | Ru-106 | 2.0 +/- 4.0 | 6.8 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-07 Lab ID: 0405096-7 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 37.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041141D04B |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.76 +/- 0.82 | 1.51 | U,G |
| 14234-35-6 | Sb-125 | 1.6 +/- 1.2 | 2.0 | U,G |
| 13967-63-0 | Sc-46 | -0.19 +/- 0.70 | 1.29 | U,G |
| 15623-47-9 | Th-227 | -0.4 +/- 3.3 | 5.7 | U,G |
| 15065-10-8 | Th-234 | 63 +/- 12 | 14 | G |
| 14913-50-9 | Tl-208 | 11.4 +/- 1.7 | 0.8 | G |
| 15117-96-1 | U-235 | 2.4 +/- 1.8 | 2.9 | U,G |
| 13982-39-3 | Zn-65 | -1.0 +/- 1.6 | 3.1 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-08 Lab ID: 0405096-8 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 110 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041000D07A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 2.84 +/- 0.70 | 1.20 | M3 |
| 14391-76-5 | Ag-110m | 0.04 +/- 0.15 | 0.26 | U |
| 14682-66-7 | Al-26 | 0.094 +/- 0.094 | 0.063 | TI |
| 14596-10-2 | Am-241 | -0.11 +/- 0.18 | 0.32 | U |
| 13966-02-4 | Ba-7 | 1.9 +/- 1.8 | 2.7 | U |
| 14913-49-6 | Bi-212 | 3.7 +/- 2.9 | 4.4 | U |
| 14733-03-0 | Bi-214 | 2.97 +/- 0.61 | 0.45 | J |
| 13982-30-4 | Ce-139 | 0.017 +/- 0.098 | 0.171 | U |
| 14762-78-8 | Ce-144 | 0.33 +/- 0.61 | 1.02 | U |
| 14093-03-9 | Co-56 | 0.27 +/- 0.35 | 0.57 | U |
| 13981-50-5 | Co-57 | 0.041 +/- 0.072 | 0.120 | U |
| 13981-38-9 | Co-58 | -0.05 +/- 0.21 | 0.40 | U |
| 10198-40-0 | Co-60 | -0.12 +/- 0.12 | 0.30 | U |
| 14392-02-0 | Cr-51 | -0.1 +/- 3.0 | 5.3 | U |
| 13967-70-9 | Cs-134 | -0.17 +/- 0.13 | 0.27 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-08 Lab ID: 0405096-8 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-B Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 110 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041000D07A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | -0.07 +/- 0.16 | 0.30 | U |
| 14683-23-9 | Eu-152 | -0.53 +/- 0.66 | 1.54 | U |
| 15585-10-1 | Eu-154 | 0.07 +/- 0.68 | 1.30 | U |
| 14391-16-3 | Eu-155 | 0.28 +/- 0.26 | 0.41 | U |
| 14596-12-4 | Fe-59 | 0 +/- 0.54 | 1.04 | U |
| 10043-66-0 | I-131 | -2.9 +/- 9.3 | 17.2 | U |
| 13966-00-2 | K-40 | 8.5 +/- 3.0 | 3.0 | |
| 13966-31-9 | Mn-54 | 0.09 +/- 0.14 | 0.23 | U |
| 13966-32-0 | Na-22 | -0.02 +/- 0.13 | 0.28 | U |
| 14681-63-1 | Nb-94 | 0.04 +/- 0.13 | 0.23 | U |
| 13967-76-5 | Nb-95 | -0.22 +/- 0.25 | 0.51 | U |
| 15100-28-4 | Pa-234m | -2 +/- 21 | 41 | U |
| 15092-94-1 | Pb-212 | 3.54 +/- 0.57 | 0.32 | |
| 15067-28-4 | Pb-214 | 3.57 +/- 0.58 | 0.43 | J |
| 13967-48-1 | Ru-106 | -0.4 +/- 1.1 | 2.2 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: MSED-08 Lab ID: 0405096-8 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 110 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041000D07A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.01 +/- 0.22 | 0.40 | U |
| 14234-35-6 | Sb-125 | 0.29 +/- 0.28 | 0.49 | U |
| 13967-63-0 | Sc-46 | -0.04 +/- 0.18 | 0.36 | U |
| 15623-47-9 | Th-227 | 0.34 +/- 0.92 | 1.52 | U |
| 15065-10-8 | Th-234 | 4.6 +/- 1.4 | 2.5 | |
| 14913-50-9 | Tl-208 | 1.12 +/- 0.27 | 0.21 | |
| 15117-96-1 | U-235 | 0.16 +/- 0.60 | 1.03 | U |
| 13982-39-3 | Zn-65 | -0.49 +/- 0.75 | 1.39 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-09 Lab ID: 0405096-9 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 33.0 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041047D10A |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 17.0 +/- 2.6 | 3.2 | M3,G |
| 14391-76-5 | Ag-110m | 0.05 +/- 0.36 | 0.61 | U,G |
| 14682-66-7 | Al-26 | 0.09 +/- 0.49 | 0.85 | U,G |
| 14596-10-2 | Am-241 | 0.12 +/- 0.87 | 1.46 | U,G |
| 13966-02-4 | Be-7 | -2.8 +/- 4.1 | 7.4 | U,G |
| 14913-49-6 | Bi-212 | 13.4 +/- 7.3 | 11.0 | G |
| 14733-03-0 | Bi-214 | 15.8 +/- 2.3 | 1.5 | G,J |
| 13982-30-4 | Ce-139 | 0.16 +/- 0.26 | 0.42 | U,G |
| 14762-78-8 | Ce-144 | 0.8 +/- 2.1 | 3.5 | U,G |
| 14093-03-9 | Co-56 | 2.3 +/- 1.3 | 1.9 | G, TI |
| 13981-50-5 | Co-57 | -0.07 +/- 0.20 | 0.35 | U,G |
| 13981-38-9 | Co-58 | -0.35 +/- 0.61 | 1.10 | U,G |
| 10198-40-0 | Co-60 | 0 +/- 0.47 | 0.81 | U,G |
| 14392-02-0 | Cr-51 | 0.6 +/- 6.2 | 10.6 | U,G |
| 13967-70-9 | Cs-134 | 1.1 +/- 4.0 | 6.5 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 25 of 87

000061

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-09 Lab ID: 0405096-9 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 33.0 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041047D10A |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | -0.07 +/- 0.38 | 0.67 | U,G |
| 14683-23-9 | Eu-152 | 1.4 +/- 2.9 | 4.8 | U,G |
| 15585-10-1 | Eu-154 | 0.5 +/- 2.3 | 3.9 | U,G |
| 14391-16-3 | Eu-155 | 0.30 +/- 0.88 | 1.47 | U,G |
| 14596-12-4 | Fe-59 | 0.2 +/- 1.6 | 2.7 | U,G |
| 10043-66-0 | I-131 | 18 +/- 20 | 32 | U,G |
| 13966-00-2 | K-40 | 10.0 +/- 5.6 | 8.3 | G |
| 13966-31-9 | Mn-54 | 0.13 +/- 0.45 | 0.76 | U,G |
| 13966-32-0 | Na-22 | -0.03 +/- 0.51 | 0.88 | U,G |
| 14681-63-1 | Nb-94 | 0.24 +/- 0.35 | 0.59 | U,G |
| 13967-76-5 | Nb-95 | -0.89 +/- 0.97 | 1.75 | U,G |
| 15100-28-4 | Pa-234m | 129 +/- 63 | 90 | G, TI |
| 15092-94-1 | Pb-212 | 15.8 +/- 2.1 | 0.8 | G |
| 15067-28-4 | Pb-214 | 18.3 +/- 2.4 | 1.3 | G,J |
| 13967-48-1 | Ru-106 | 0.1 +/- 3.5 | 6.0 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|--|
| Field ID: MSED-09 Lab ID: 0405096-9 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 33.0 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041047D10A |
|--|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 1.2 +/- 1.5 | 11.2 | U,G |
| 14234-35-6 | Sb-125 | 0.67 +/- 0.74 | 1.27 | U,G |
| 13967-63-0 | Sc-46 | 0.46 +/- 0.52 | 0.84 | U,G |
| 15623-47-9 | Th-227 | 16 +/- 42 | 69 | U,G |
| 15065-10-8 | Th-234 | 29.7 +/- 6.0 | 9.0 | G |
| 14913-50-9 | Tl-208 | 4.59 +/- 0.78 | 0.65 | G |
| 15117-96-1 | U-235 | 1.2 +/- 1.5 | 2.4 | U,G |
| 13982-39-3 | Zn-65 | -2.2 +/- 1.6 | 3.0 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halfives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|--|---|---|
| Field ID: MSED-10 Lab ID: 0405096-10 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 94.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041142D04A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 45.4 +/- 5.7 | 2.5 | M3 |
| 14391-76-5 | Ag-110m | -0.26 +/- 0.40 | 0.71 | U |
| 14682-66-7 | Al-26 | -0.03 +/- 0.39 | 0.69 | U |
| 14596-10-2 | Am-241 | 1.9 +/- 2.3 | 3.7 | U |
| 13966-02-4 | Be-7 | 2.5 +/- 5.1 | 8.6 | U |
| 14913-49-6 | Bi-212 | 46.3 +/- 8.9 | 8.9 | |
| 14733-03-0 | Bi-214 | 75.2 +/- 9.0 | 1.2 | J |
| 13982-30-4 | Ce-139 | 0.04 +/- 0.31 | 0.51 | U |
| 14762-78-8 | Ce-144 | -0.7 +/- 2.0 | 3.3 | U |
| 14093-03-9 | Co-56 | 1.8 +/- 2.5 | 4.1 | U |
| 13981-50-5 | Co-57 | -0.08 +/- 0.26 | 0.44 | U |
| 13981-38-9 | Co-58 | -0.07 +/- 0.54 | 0.93 | U |
| 10198-40-0 | Co-60 | 0.15 +/- 0.45 | 0.76 | U |
| 14392-02-0 | Cr-51 | 2.1 +/- 8.1 | 13.6 | U |
| 13967-70-9 | Cs-134 | 0.80 +/- 0.30 | 0.58 | TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: MSED-10 Lab ID: 0405096-10 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 94.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041142D04A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.19 +/- 0.58 | 0.97 | U |
| 14683-23-9 | Eu-152 | 1.4 +/- 4.1 | 6.8 | U |
| 15585-10-1 | Eu-154 | 0.5 +/- 2.8 | 4.7 | U |
| 14391-16-3 | Eu-155 | 3.7 +/- 1.3 | 2.0 | SI |
| 14596-12-4 | Fe-59 | -1.2 +/- 1.5 | 2.6 | U |
| 10043-66-0 | I-131 | 10 +/- 27 | 44 | U |
| 13966-00-2 | K-40 | 5.8 +/- 5.4 | 8.6 | U |
| 13966-31-9 | Mn-54 | 0.31 +/- 0.43 | 0.71 | U |
| 13966-32-0 | Na-22 | 0.57 +/- 0.58 | 0.89 | U |
| 14681-63-1 | Nb-94 | 0.44 +/- 0.37 | 0.59 | U |
| 13967-76-5 | Nb-95 | -2.6 +/- 1.1 | 2.0 | U |
| 15100-28-4 | Pa-234m | 176 +/- 75 | 108 | |
| 15092-94-1 | Pb-212 | 48.3 +/- 5.8 | 0.9 | |
| 15067-28-4 | Pb-214 | 82.0 +/- 9.7 | 1.2 | J |
| 13967-48-1 | Ru-106 | 0.4 +/- 3.3 | 5.7 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

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R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: MSED-10 Lab ID: 0405096-10 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 94.3 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041142D04A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.06 +/- 0.60 | 1.02 | U |
| 14234-35-6 | Sb-125 | -0.08 +/- 0.89 | 1.52 | U |
| 13967-63-0 | Sc-46 | 0.07 +/- 0.59 | 1.01 | U |
| 15623-47-9 | Th-227 | 4.6 +/- 1.8 | 2.7 | SI |
| 15065-10-8 | Th-234 | 121 +/- 16 | 12 | |
| 14913-50-9 | Tl-208 | 14.0 +/- 1.8 | 0.7 | |
| 15117-96-1 | U-235 | 5.6 +/- 1.9 | 3.4 | |
| 13982-39-3 | Zn-65 | -1.0 +/- 1.3 | 2.4 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 101 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041001D07A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 2.27 +/- 0.68 | 0.97 | M3 |
| 14391-76-5 | Ag-110m | -0.06 +/- 0.14 | 0.27 | U |
| 14682-66-7 | Al-26 | -0.04 +/- 0.13 | 0.30 | U |
| 14596-10-2 | Am-241 | 0.04 +/- 0.16 | 0.28 | U |
| 13966-02-4 | Be-7 | -0.3 +/- 1.6 | 3.1 | U |
| 14913-49-6 | Bi-212 | 2.6 +/- 2.0 | 2.9 | U |
| 14733-03-0 | Bi-214 | 1.86 +/- 0.51 | 0.49 | J |
| 13982-30-4 | Ce-139 | 0.033 +/- 0.096 | 0.165 | U |
| 14762-78-8 | Ce-144 | -0.57 +/- 0.53 | 1.02 | U |
| 14093-03-9 | Co-56 | -0.04 +/- 0.50 | 0.95 | U |
| 13981-50-5 | Co-57 | 0.022 +/- 0.063 | 0.108 | U |
| 13981-38-9 | Co-58 | -0.07 +/- 0.19 | 0.39 | U |
| 10198-40-0 | Co-60 | 0.02 +/- 0.16 | 0.31 | U |
| 14392-02-0 | Cr-51 | -2.2 +/- 3.3 | 6.4 | U |
| 13967-70-9 | Cs-134 | 0.03 +/- 0.12 | 0.22 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 101 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041001D07A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.08 +/- 0.13 | 0.22 | U |
| 14683-23-9 | Eu-152 | 0.48 +/- 0.88 | 1.52 | U |
| 15585-10-1 | Eu-154 | 0.33 +/- 0.80 | 1.42 | U |
| 14391-16-3 | Eu-155 | -0.08 +/- 0.21 | 0.39 | U |
| 14596-12-4 | Fe-59 | 0.44 +/- 0.70 | 1.17 | U |
| 10043-66-0 | I-131 | -3.7 +/- 9.3 | 17.9 | U |
| 13966-00-2 | K-40 | 29.2 +/- 6.0 | 2.8 | |
| 13966-31-9 | Mn-54 | 0.06 +/- 0.15 | 0.26 | U |
| 13966-32-0 | Na-22 | 0.02 +/- 0.14 | 0.27 | U |
| 14681-63-1 | Nb-94 | -0.03 +/- 0.15 | 0.28 | U |
| 13967-76-5 | Nb-95 | -0.10 +/- 0.23 | 0.46 | U |
| 15100-28-4 | Pa-234m | 22 +/- 26 | 43 | U |
| 15092-94-1 | Pb-212 | 1.55 +/- 0.35 | 0.32 | |
| 15067-28-4 | Pb-214 | 2.35 +/- 0.44 | 0.39 | J |
| 13967-48-1 | Ru-106 | 0.2 +/- 1.1 | 1.9 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 101 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041001D07A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.02 +/- 0.21 | 0.40 | U |
| 14234-35-6 | Sb-125 | -0.24 +/- 0.26 | 0.55 | U |
| 13967-63-0 | Sc-46 | -0.02 +/- 0.22 | 0.43 | U |
| 15623-47-9 | Th-227 | -0.25 +/- 0.78 | 1.43 | U |
| 15065-10-8 | Th-234 | 1.8 +/- 1.1 | 2.3 | U |
| 14913-50-9 | Tl-208 | 0.30 +/- 0.17 | 0.24 | |
| 15117-96-1 | U-235 | 0.31 +/- 0.47 | 0.78 | U |
| 13982-39-3 | Zn-65 | -0.35 +/- 0.37 | 0.81 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halfives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 102 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041048D10A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 1.29 +/- 0.41 | 0.87 | M3 |
| 14391-76-5 | Ag-110m | -0.07 +/- 0.12 | 0.21 | U |
| 14682-66-7 | Al-26 | 0.05 +/- 0.13 | 0.23 | U |
| 14596-10-2 | Am-241 | 0.10 +/- 0.21 | 0.36 | U |
| 13966-02-4 | Be-7 | 0.5 +/- 1.2 | 2.0 | U |
| 14913-49-6 | Bi-212 | 1.9 +/- 1.5 | 2.3 | U |
| 14733-03-0 | Bi-214 | 1.44 +/- 0.36 | 0.47 | J |
| 13982-30-4 | Ce-139 | -0.002 +/- 0.066 | 0.114 | U |
| 14762-78-8 | Ce-144 | 0.23 +/- 0.43 | 0.71 | U |
| 14093-03-9 | Co-56 | 0.66 +/- 0.41 | 0.62 | Tl |
| 13981-50-5 | Co-57 | 0.003 +/- 0.054 | 0.092 | U |
| 13981-38-9 | Co-58 | -0.22 +/- 0.18 | 0.34 | U |
| 10198-40-0 | Co-60 | 0.10 +/- 0.15 | 0.24 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

Tl - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 102 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041048D10A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14392-02-0 | Cr-51 | -1.3 +/- 2.0 | 3.6 | U |
| 13967-70-9 | Cs-134 | 0.73 +/- 0.94 | 1.54 | U |
| 10045-97-3 | Cs-137 | 0.05 +/- 0.11 | 0.18 | U |
| 14683-23-9 | Eu-152 | 0.27 +/- 0.67 | 1.15 | U |
| 15585-10-1 | Eu-154 | -0.09 +/- 0.66 | 1.17 | U |
| 14391-16-3 | Eu-155 | 0.01 +/- 0.21 | 0.36 | U |
| 14596-12-4 | Fe-59 | -0.02 +/- 0.51 | 0.90 | U |
| 10043-66-0 | I-131 | 2.0 +/- 6.5 | 11.1 | U |
| 13966-00-2 | K-40 | 33.6 +/- 5.0 | 2.8 | |
| 13966-31-9 | Mn-54 | -0.09 +/- 0.12 | 0.22 | U |
| 13966-32-0 | Na-22 | -0.01 +/- 0.15 | 0.26 | U |
| 14681-63-1 | Nb-94 | 0.03 +/- 0.10 | 0.17 | U |
| 13967-76-5 | Nb-95 | 0.16 +/- 0.19 | 0.30 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-01 Lab ID: 0405096-11DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 102 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041048D10A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15100-28-4 | Pa-234m | -5 +/- 20 | 36 | U |
| 15092-94-1 | Pb-212 | 1.34 +/- 0.24 | 0.21 | |
| 15067-28-4 | Pb-214 | 1.61 +/- 0.29 | 0.34 | J |
| 13967-48-1 | Ru-106 | -0.06 +/- 0.96 | 1.67 | U |
| 14683-10-4 | Sb-124 | 0.89 +/- 0.39 | 2.70 | U,W |
| 14234-35-6 | Sb-125 | 0.12 +/- 0.19 | 0.31 | U |
| 13967-63-0 | Sc-46 | -0.04 +/- 0.16 | 0.29 | U |
| 15623-47-9 | Th-227 | -1.46 +/- 0.67 | 1.25 | U |
| 15065-10-8 | Th-234 | 2.9 +/- 1.3 | 1.9 | TI |
| 14913-50-9 | Tl-208 | 0.41 +/- 0.15 | 0.21 | |
| 15117-96-1 | U-235 | -0.04 +/- 0.39 | 0.67 | U |
| 13982-39-3 | Zn-65 | 0.35 +/- 0.48 | 0.80 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 half-lives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 118 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041059D07A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|--------|---------------|
| 15262-20-1 | Ra-228 | 0.76 +/- 0.13 | 0.22 | M3,G |
| 14391-76-5 | Ag-110m | 0.012 +/- 0.019 | 0.032 | U,G |
| 14682-66-7 | Al-26 | 0.001 +/- 0.016 | 0.028 | U,G |
| 14596-10-2 | Am-241 | 0.036 +/- 0.021 | 0.034 | G,TI |
| 13966-02-4 | Be-7 | 0.10 +/- 0.25 | 0.42 | U,G |
| 14913-49-6 | Bi-212 | 0.83 +/- 0.32 | 0.47 | G |
| 14733-03-0 | Bi-214 | 1.10 +/- 0.15 | 0.09 | G,J |
| 13982-30-4 | Ce-139 | 0.005 +/- 0.012 | 0.020 | U,G |
| 14762-78-8 | Ce-144 | -0.043 +/- 0.071 | 0.120 | U,G |
| 14093-03-9 | Co-56 | 0.203 +/- 0.080 | 0.118 | G,TI |
| 13981-50-5 | Co-57 | -0.0037 +/- 0.0091 | 0.0152 | U,G |
| 13981-38-9 | Co-58 | -0.015 +/- 0.027 | 0.047 | U,G |
| 10198-40-0 | Co-60 | -0.013 +/- 0.021 | 0.037 | U,G |
| 14392-02-0 | Cr-51 | 0.05 +/- 0.44 | 0.73 | U,G |
| 13967-70-9 | Cs-134 | 0.007 +/- 0.011 | 0.023 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 118 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041059D07A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.098 +/- 0.022 | 0.027 | G |
| 14683-23-9 | Eu-152 | 0.096 +/- 0.073 | 0.114 | U,G |
| 15585-10-1 | Eu-154 | 0.08 +/- 0.16 | 0.26 | U,G |
| 14391-16-3 | Eu-155 | 0.066 +/- 0.037 | 0.059 | G |
| 14596-12-4 | Fe-59 | 0.027 +/- 0.097 | 0.163 | U,G |
| 10043-66-0 | I-131 | -0.3 +/- 1.9 | 3.2 | U,G |
| 13966-00-2 | K-40 | 28.1 +/- 3.4 | 0.6 | G |
| 13966-31-9 | Mn-54 | -0.009 +/- 0.019 | 0.033 | U,G |
| 13966-32-0 | Na-22 | 0 +/- 0.025 | 0.043 | U,G |
| 14681-63-1 | Nb-94 | 0.006 +/- 0.018 | 0.030 | U,G |
| 13967-76-5 | Nb-95 | -0.005 +/- 0.050 | 0.084 | U,G |
| 15100-28-4 | Pa-234m | 3.4 +/- 2.7 | 4.3 | U,G |
| 15092-94-1 | Pb-212 | 0.80 +/- 0.10 | 0.06 | G |
| 15067-28-4 | Pb-214 | 1.20 +/- 0.15 | 0.07 | G,J |
| 13967-48-1 | Ru-106 | 0.12 +/- 0.16 | 0.27 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 118 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041059D07A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | -0.004 +/- 0.031 | 0.053 | U,G |
| 14234-35-6 | Sb-125 | -0.014 +/- 0.037 | 0.063 | U,G |
| 13967-63-0 | Sc-46 | 0.015 +/- 0.029 | 0.048 | U,G |
| 15623-47-9 | Th-227 | 0.120 +/- 0.083 | 0.132 | U,G |
| 15065-10-8 | Th-234 | 2.25 +/- 0.33 | 0.37 | G |
| 14913-50-9 | Tl-208 | 0.218 +/- 0.037 | 0.042 | G |
| 15117-96-1 | U-235 | 0.121 +/- 0.077 | 0.151 | U,G |
| 13982-39-3 | Zn-65 | 0.018 +/- 0.054 | 0.091 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 105 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041131D03A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.61 +/- 0.11 | 0.22 | M3 |
| 14391-76-5 | Ag-110m | -0.004 +/- 0.026 | 0.044 | U |
| 14682-66-7 | Al-26 | -0.001 +/- 0.018 | 0.031 | U |
| 14596-10-2 | Am-241 | 0.089 +/- 0.087 | 0.142 | U |
| 13966-02-4 | Be-7 | 0.10 +/- 0.26 | 0.42 | U |
| 14913-49-6 | Bi-212 | 0.67 +/- 0.28 | 0.42 | |
| 14733-03-0 | Bi-214 | 0.90 +/- 0.13 | 0.11 | J |
| 13982-30-4 | Ce-139 | -0.008 +/- 0.014 | 0.024 | U |
| 14762-78-8 | Ce-144 | 0.013 +/- 0.076 | 0.127 | U |
| 14093-03-9 | Co-56 | 0.078 +/- 0.058 | 0.093 | U |
| 13981-50-5 | Co-57 | 0.005 +/- 0.010 | 0.017 | U |
| 13981-38-9 | Co-58 | -0.002 +/- 0.028 | 0.047 | U |
| 10198-40-0 | Co-60 | -0.006 +/- 0.022 | 0.038 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 105 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041131D03A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14392-02-0 | Cr-51 | -0.54 +/- 0.45 | 0.77 | U |
| 13967-70-9 | Cs-134 | 0.014 +/- 0.015 | 0.030 | U |
| 10045-97-3 | Cs-137 | 0.090 +/- 0.022 | 0.029 | |
| 14683-23-9 | Eu-152 | 0.04 +/- 0.11 | 0.18 | U |
| 15585-10-1 | Eu-154 | -0.01 +/- 0.12 | 0.20 | U |
| 14391-16-3 | Eu-155 | 0.045 +/- 0.051 | 0.083 | U |
| 14596-12-4 | Fe-59 | -0.043 +/- 0.097 | 0.165 | U |
| 10043-66-0 | I-131 | 1.2 +/- 1.9 | 3.0 | U |
| 13966-00-2 | K-40 | 27.4 +/- 3.3 | 0.7 | |
| 13966-31-9 | Mn-54 | -0.009 +/- 0.021 | 0.035 | U |
| 13966-32-0 | Na-22 | 0.001 +/- 0.026 | 0.044 | U |
| 14681-63-1 | Nb-94 | 0.015 +/- 0.019 | 0.031 | U |
| 13967-76-5 | Nb-95 | 0.042 +/- 0.043 | 0.068 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-02 Lab ID: 0405096-12DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 1000 minutes Report Basis: Dry Weight | Final Aliquot: 105 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041131D03A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15100-28-4 | Pa-234m | 2.4 +/- 4.3 | 7.1 | U |
| 15092-94-1 | Pb-212 | 0.607 +/- 0.084 | 0.065 | W |
| 15067-28-4 | Pb-214 | 0.98 +/- 0.13 | 0.10 | J |
| 13967-48-1 | Ru-106 | -0.05 +/- 0.17 | 0.29 | U |
| 14683-10-4 | Sb-124 | -0.007 +/- 0.033 | 0.055 | U |
| 14234-35-6 | Sb-125 | 0.011 +/- 0.040 | 0.073 | U |
| 13967-63-0 | Sc-46 | -0.010 +/- 0.030 | 0.050 | U |
| 15623-47-9 | Th-227 | 0.2 +/- 1.9 | 3.1 | U |
| 15065-10-8 | Th-234 | 2.10 +/- 0.45 | 0.63 | |
| 14913-50-9 | Tl-208 | 0.159 +/- 0.038 | 0.055 | |
| 15117-96-1 | U-235 | 0.10 +/- 0.12 | 0.19 | U |
| 13982-39-3 | Zn-65 | -0.040 +/- 0.083 | 0.142 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halfives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041072D03A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.99 +/- 0.35 | 0.57 | M3,G |
| 14391-76-5 | Ag-110m | -0.079 +/- 0.097 | 0.197 | U,G |
| 14682-66-7 | Al-26 | 0.027 +/- 0.075 | 0.137 | U,G |
| 14596-10-2 | Am-241 | -0.17 +/- 0.51 | 0.90 | U,G |
| 13966-02-4 | Be-7 | 0.6 +/- 1.1 | 1.9 | U,G |
| 14913-49-6 | Bi-212 | 1.2 +/- 1.1 | 1.7 | U,G |
| 14733-03-0 | Bi-214 | 2.04 +/- 0.36 | 0.23 | G,J |
| 13982-30-4 | Ce-139 | -0.043 +/- 0.076 | 0.136 | U,G |
| 14762-78-8 | Ce-144 | -0.03 +/- 0.44 | 0.77 | U,G |
| 14093-03-9 | Co-56 | 0.27 +/- 0.22 | 0.34 | U,G |
| 13981-50-5 | Co-57 | 0.006 +/- 0.057 | 0.098 | U,G |
| 13981-38-9 | Co-58 | -0.070 +/- 0.099 | 0.202 | U,G |
| 10198-40-0 | Co-60 | -0.036 +/- 0.090 | 0.176 | U,G |
| 14392-02-0 | Cr-51 | -0.3 +/- 1.9 | 3.4 | U,G |
| 13967-70-9 | Cs-134 | -0.05 +/- 0.81 | 1.34 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041072D03A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.74 +/- 0.17 | 0.15 | G |
| 14683-23-9 | Eu-152 | 0.44 +/- 0.43 | 0.67 | U,G |
| 15585-10-1 | Eu-154 | -0.11 +/- 0.37 | 0.72 | U,G |
| 14391-16-3 | Eu-155 | 0.12 +/- 0.24 | 0.40 | U,G |
| 14596-12-4 | Fe-59 | 0.09 +/- 0.31 | 0.55 | U,G |
| 10043-66-0 | I-131 | -0.6 +/- 5.8 | 10.5 | U,G |
| 13966-00-2 | K-40 | 12.0 +/- 2.4 | 1.5 | G |
| 13966-31-9 | Mn-54 | 0.023 +/- 0.077 | 0.136 | U,G |
| 13966-32-0 | Na-22 | 0.035 +/- 0.087 | 0.153 | U,G |
| 14681-63-1 | Nb-94 | -0.076 +/- 0.071 | 0.143 | U,G |
| 13967-76-5 | Nb-95 | 0.07 +/- 0.13 | 0.23 | U,G |
| 15100-28-4 | Pa-234m | -7 +/- 13 | 26 | U,G |
| 15092-94-1 | Pb-212 | 1.27 +/- 0.25 | 0.22 | G |
| 15067-28-4 | Pb-214 | 2.16 +/- 0.35 | 0.29 | G,J |
| 13967-48-1 | Ru-106 | 0.22 +/- 0.67 | 1.18 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

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BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041072D03A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 0.03 +/- 0.11 | 0.19 | U,G |
| 14234-35-6 | Sb-125 | 0.03 +/- 0.19 | 0.34 | U,G |
| 13967-63-0 | Sc-46 | -0.08 +/- 0.11 | 0.22 | U,G |
| 15623-47-9 | Th-227 | -0.45 +/- 0.66 | 1.18 | U,G |
| 15065-10-8 | Th-234 | 1.4 +/- 1.2 | 1.9 | U,G |
| 14913-50-9 | Tl-208 | 0.29 +/- 0.11 | 0.13 | G |
| 15117-96-1 | U-235 | 0.22 +/- 0.40 | 0.66 | U,G |
| 13982-39-3 | Zn-65 | 0.05 +/- 0.40 | 0.69 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D02A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 1.13 +/- 0.30 | 0.39 | M3,G |
| 14391-76-5 | Ag-110m | -0.009 +/- 0.087 | 0.159 | U,G |
| 14682-66-7 | Al-26 | -0.033 +/- 0.058 | 0.129 | U,G |
| 14596-10-2 | Am-241 | -0.52 +/- 0.49 | 0.93 | U,G |
| 13966-02-4 | Be-7 | 0.09 +/- 0.87 | 1.56 | U,G |
| 14913-49-6 | Bi-212 | 1.66 +/- 0.89 | 1.13 | G |
| 14733-03-0 | Bi-214 | 1.97 +/- 0.34 | 0.21 | G,J |
| 13982-30-4 | Ce-139 | -0.014 +/- 0.055 | 0.099 | U,G |
| 14762-78-8 | Ce-144 | -0.29 +/- 0.36 | 0.66 | U,G |
| 14093-03-9 | Co-56 | 0.24 +/- 0.21 | 0.32 | U,G |
| 13981-50-5 | Co-57 | -0.024 +/- 0.044 | 0.080 | U,G |
| 13981-38-9 | Co-58 | 0.016 +/- 0.087 | 0.158 | U,G |
| 10198-40-0 | Co-60 | -0.057 +/- 0.053 | 0.123 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D02A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14392-02-0 | Cr-51 | 0.5 +/- 1.5 | 2.6 | U,G |
| 13967-70-9 | Cs-134 | 0.052 +/- 0.068 | 0.111 | U,G |
| 10045-97-3 | Cs-137 | 0.97 +/- 0.18 | 0.12 | G |
| 14683-23-9 | Eu-152 | 0.31 +/- 0.32 | 0.49 | U,G |
| 15585-10-1 | Eu-154 | -0.25 +/- 0.32 | 0.67 | U,G |
| 14391-16-3 | Eu-155 | 0.15 +/- 0.19 | 0.32 | U,G |
| 14596-12-4 | Fe-59 | 0.15 +/- 0.24 | 0.40 | U,G |
| 10043-66-0 | I-131 | 2.4 +/- 5.4 | 9.2 | U,G |
| 13966-00-2 | K-40 | 12.3 +/- 2.3 | 0.9 | G |
| 13966-31-9 | Mn-54 | 0.033 +/- 0.058 | 0.098 | U,G |
| 13966-32-0 | Na-22 | 0.056 +/- 0.058 | 0.088 | U,G |
| 14681-63-1 | Nb-94 | 0.004 +/- 0.059 | 0.107 | U,G |
| 13967-76-5 | Nb-95 | -0.14 +/- 0.10 | 0.22 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SSED-03 Lab ID: 0405096-13DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 410 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D02A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15100-28-4 | Pa-234m | 6.0 +/- 8.5 | 14.2 | U,G |
| 15092-94-1 | Pb-212 | 1.19 +/- 0.23 | 0.18 | G |
| 15067-28-4 | Pb-214 | 2.30 +/- 0.35 | 0.25 | G,J |
| 13967-48-1 | Ru-106 | -0.32 +/- 0.49 | 1.00 | U,G |
| 14683-10-4 | Sb-124 | -0.03 +/- 0.12 | 0.21 | U,G |
| 14234-35-6 | Sb-125 | 0.07 +/- 0.17 | 0.29 | U,G |
| 13967-63-0 | Sc-46 | 0.007 +/- 0.089 | 0.164 | U,G |
| 15623-47-9 | Th-227 | 0.28 +/- 0.35 | 0.57 | U,G |
| 15065-10-8 | Th-234 | 1.6 +/- 1.3 | 2.1 | U,G |
| 14913-50-9 | Tl-208 | 0.26 +/- 0.10 | 0.13 | G |
| 15117-96-1 | U-235 | 0.24 +/- 0.34 | 0.57 | U,G |
| 13982-39-3 | Zn-65 | 0 +/- 0.37 | 0.64 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halfives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-04 Lab ID: 0405096-14 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 431 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041073D03A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 0.96 +/- 0.30 | 0.50 | M3 |
| 14391-76-5 | Ag-110m | -0.075 +/- 0.077 | 0.152 | U |
| 14682-66-7 | Al-26 | 0.051 +/- 0.062 | 0.099 | U |
| 14596-10-2 | Am-241 | 0.25 +/- 0.49 | 0.83 | U |
| 13966-02-4 | Be-7 | -0.4 +/- 1.1 | 2.0 | U |
| 14913-49-6 | Bi-212 | 1.6 +/- 1.2 | 1.8 | U |
| 14733-03-0 | Bi-214 | 1.37 +/- 0.28 | 0.24 | J |
| 13982-30-4 | Ce-139 | 0.022 +/- 0.073 | 0.124 | U |
| 14762-78-8 | Ce-144 | -0.18 +/- 0.37 | 0.66 | U |
| 14093-03-9 | Co-56 | 0.12 +/- 0.25 | 0.42 | U |
| 13981-50-5 | Co-57 | -0.011 +/- 0.053 | 0.094 | U |
| 13981-38-9 | Co-58 | -0.09 +/- 0.10 | 0.21 | U |
| 10198-40-0 | Co-60 | 0.010 +/- 0.073 | 0.136 | U |
| 14392-02-0 | Cr-51 | -0.2 +/- 1.7 | 3.0 | U |
| 13967-70-9 | Cs-134 | 0.058 +/- 0.064 | 0.103 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-04 Lab ID: 0405096-14 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 431 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041073D03A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.104 +/- 0.082 | 0.125 | U |
| 14683-23-9 | Eu-152 | 0.14 +/- 0.32 | 0.57 | U |
| 15585-10-1 | Eu-154 | 0.17 +/- 0.38 | 0.65 | U |
| 14391-16-3 | Eu-155 | 0.15 +/- 0.21 | 0.34 | U |
| 14596-12-4 | Fe-59 | 0.02 +/- 0.27 | 0.50 | U |
| 10043-66-0 | I-131 | -1.1 +/- 5.7 | 10.4 | U |
| 13966-00-2 | K-40 | 11.5 +/- 2.3 | 1.3 | |
| 13966-31-9 | Mn-54 | 0.012 +/- 0.075 | 0.135 | U |
| 13966-32-0 | Na-22 | 0.013 +/- 0.079 | 0.145 | U |
| 14681-63-1 | Nb-94 | 0.055 +/- 0.057 | 0.090 | U |
| 13967-76-5 | Nb-95 | 0.05 +/- 0.19 | 0.33 | U |
| 15100-28-4 | Pa-234m | -9 +/- 13 | 25 | U |
| 15092-94-1 | Pb-212 | 1.25 +/- 0.24 | 0.21 | |
| 15067-28-4 | Pb-214 | 1.82 +/- 0.30 | 0.22 | J |
| 13967-48-1 | Ru-106 | 0 +/- 0.61 | 1.12 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-04 Lab ID: 0405096-14 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 431 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041073D03A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | 0.02 +/- 0.11 | 0.19 | U |
| 14234-35-6 | Sb-125 | -0.02 +/- 0.18 | 0.33 | U |
| 13967-63-0 | Sc-46 | 0.075 +/- 0.097 | 0.159 | U |
| 15623-47-9 | Th-227 | 0.03 +/- 0.65 | 1.10 | U |
| 15065-10-8 | Th-234 | 1.9 +/- 1.3 | 2.1 | U |
| 14913-50-9 | Tl-208 | 0.38 +/- 0.12 | 0.13 | |
| 15117-96-1 | U-235 | 0.16 +/- 0.36 | 0.61 | U |
| 13982-39-3 | Zn-65 | -0.02 +/- 0.38 | 0.66 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-05 Lab ID: 0405096-15 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 104 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041049D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 1.03 +/- 0.36 | 0.75 | M3 |
| 14391-76-5 | Ag-110m | -0.05 +/- 0.11 | 0.20 | U |
| 14682-66-7 | Al-26 | -0.01 +/- 0.13 | 0.24 | U |
| 14596-10-2 | Am-241 | 0.06 +/- 0.20 | 0.33 | U |
| 13966-02-4 | Be-7 | -0.8 +/- 1.1 | 2.1 | U |
| 14913-49-6 | Bi-212 | 1.6 +/- 1.5 | 2.4 | U |
| 14733-03-0 | Bi-214 | 1.38 +/- 0.34 | 0.45 | J |
| 13982-30-4 | Ce-139 | -0.022 +/- 0.068 | 0.119 | U |
| 14762-78-8 | Ce-144 | -0.01 +/- 0.39 | 0.68 | U |
| 14093-03-9 | Co-56 | 0.31 +/- 0.34 | 0.55 | U |
| 13981-50-5 | Co-57 | 0.021 +/- 0.049 | 0.082 | U |
| 13981-38-9 | Co-58 | 0.06 +/- 0.16 | 0.27 | U |
| 10198-40-0 | Co-60 | 0.06 +/- 0.10 | 0.17 | U |
| 14392-02-0 | Cr-51 | -0.4 +/- 1.8 | 3.2 | U |
| 13967-70-9 | Cs-134 | 0.94 +/- 0.78 | 1.27 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-05 Lab ID: 0405096-15 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 104 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041049D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.21 +/- 0.11 | 0.16 | TI |
| 14683-23-9 | Eu-152 | 0.32 +/- 0.62 | 1.04 | U |
| 15585-10-1 | Eu-154 | 0.30 +/- 0.54 | 0.92 | U |
| 14391-16-3 | Eu-155 | 0.24 +/- 0.20 | 0.32 | U |
| 14596-12-4 | Fe-59 | -0.28 +/- 0.48 | 0.87 | U |
| 10043-66-0 | I-131 | -5.3 +/- 6.4 | 11.8 | U |
| 13966-00-2 | K-40 | 14.8 +/- 3.0 | 2.8 | |
| 13966-31-9 | Mn-54 | 0.04 +/- 0.11 | 0.19 | U |
| 13966-32-0 | Na-22 | -0.11 +/- 0.14 | 0.26 | U |
| 14681-63-1 | Nb-94 | -0.029 +/- 0.087 | 0.157 | U |
| 13967-76-5 | Nb-95 | -0.27 +/- 0.24 | 0.45 | U |
| 15100-28-4 | Pa-234m | 5 +/- 16 | 27 | U |
| 15092-94-1 | Pb-212 | 1.20 +/- 0.22 | 0.20 | |
| 15067-28-4 | Pb-214 | 1.57 +/- 0.28 | 0.30 | J |
| 13967-48-1 | Ru-106 | 0.07 +/- 0.88 | 1.54 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|--|---|--|
| Field ID: SSED-05 Lab ID: 0405096-15 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 104 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041049D10A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 1.45 +/- 0.39 | 2.25 | U |
| 14234-35-6 | Sb-125 | 0.02 +/- 0.18 | 0.32 | U |
| 13967-63-0 | Sc-46 | 0 +/- 0.14 | 0.25 | U |
| 15623-47-9 | Th-227 | -1.80 +/- 0.66 | 1.25 | U |
| 15065-10-8 | Th-234 | 0.60 +/- 0.95 | 1.57 | U |
| 14913-50-9 | Tl-208 | 0.31 +/- 0.12 | 0.17 | |
| 15117-96-1 | U-235 | 0.26 +/- 0.34 | 0.56 | U |
| 13982-39-3 | Zn-65 | 0.37 +/- 0.44 | 0.72 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-06 Lab ID: 0405096-16 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 104 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041050D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 2.00 +/- 0.45 | 0.69 | M3 |
| 14391-76-5 | Ag-110m | -0.10 +/- 0.16 | 0.28 | U |
| 14682-66-7 | Al-26 | -0.08 +/- 0.14 | 0.27 | U |
| 14596-10-2 | Am-241 | 0.29 +/- 0.22 | 0.35 | U |
| 13966-02-4 | Be-7 | 0 +/- 1.2 | 2.0 | U |
| 14913-49-6 | Bi-212 | 0.6 +/- 1.5 | 2.5 | U |
| 14733-03-0 | Bi-214 | 2.01 +/- 0.39 | 0.42 | J |
| 13982-30-4 | Ce-139 | -0.034 +/- 0.068 | 0.119 | U |
| 14762-78-8 | Ce-144 | 0.06 +/- 0.41 | 0.71 | U |
| 14093-03-9 | Co-56 | 0.33 +/- 0.38 | 0.63 | U |
| 13981-50-5 | Co-57 | 0.009 +/- 0.053 | 0.091 | U |
| 13981-38-9 | Co-58 | -0.07 +/- 0.18 | 0.31 | U |
| 10198-40-0 | Co-60 | -0.03 +/- 0.14 | 0.25 | U |
| 14392-02-0 | Cr-51 | -1.2 +/- 1.9 | 3.5 | U |
| 13967-70-9 | Cs-134 | 0.3 +/- 1.1 | 1.7 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-06 Lab ID: 0405096-16 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 104 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041050D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.19 +/- 0.13 | 0.20 | U |
| 14683-23-9 | Eu-152 | 0.36 +/- 0.58 | 0.98 | U |
| 15585-10-1 | Eu-154 | 0.06 +/- 0.57 | 1.00 | U |
| 14391-16-3 | Eu-155 | -0.02 +/- 0.21 | 0.36 | U |
| 14596-12-4 | Fe-59 | 0.27 +/- 0.44 | 0.74 | U |
| 10043-66-0 | I-131 | 5.2 +/- 6.8 | 11.1 | U |
| 13966-00-2 | K-40 | 12.1 +/- 2.7 | 2.8 | |
| 13966-31-9 | Mn-54 | 0.02 +/- 0.12 | 0.20 | U |
| 13966-32-0 | Na-22 | -0.08 +/- 0.14 | 0.25 | U |
| 14681-63-1 | Nb-94 | 0.05 +/- 0.10 | 0.17 | U |
| 13967-76-5 | Nb-95 | 0.13 +/- 0.17 | 0.28 | U |
| 15100-28-4 | Pa-234m | 16 +/- 17 | 28 | U |
| 15092-94-1 | Pb-212 | 1.65 +/- 0.28 | 0.22 | |
| 15067-28-4 | Pb-214 | 2.40 +/- 0.37 | 0.34 | J |
| 13967-48-1 | Ru-106 | -0.32 +/- 0.90 | 1.61 | U |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|--|---|--|
| Field ID: SSED-06 Lab ID: 0405096-16 Library: KENT_FANP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 104 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041050D10A |
|--|--|---|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 0.28 +/- 0.37 | 3.07 | U |
| 14234-35-6 | Sb-125 | 0.29 +/- 0.20 | 0.33 | U |
| 13967-63-0 | Sc-46 | 0.02 +/- 0.16 | 0.27 | U |
| 15623-47-9 | Th-227 | -1.75 +/- 0.72 | 1.33 | U |
| 15065-10-8 | Th-234 | 1.5 +/- 1.2 | 1.9 | U |
| 14913-50-9 | Tl-208 | 0.42 +/- 0.15 | 0.21 | |
| 15117-96-1 | U-235 | 0.19 +/- 0.37 | 0.62 | U |
| 13982-39-3 | Zn-65 | 0.78 +/- 0.48 | 0.74 | Tl |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

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LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-07 Lab ID: 0405096-17 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 400 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041060D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 2.10 +/- 0.42 | 0.39 | M3,G |
| 14391-76-5 | Ag-110m | -0.04 +/- 0.12 | 0.22 | U,G |
| 14682-66-7 | Al-26 | 0.003 +/- 0.074 | 0.146 | U,G |
| 14596-10-2 | Am-241 | 0.10 +/- 0.11 | 0.17 | U,G |
| 13966-02-4 | Be-7 | 0.2 +/- 1.2 | 2.0 | U,G |
| 14913-49-6 | Bi-212 | 1.8 +/- 1.3 | 2.0 | U,G |
| 14733-03-0 | Bi-214 | 2.73 +/- 0.44 | 0.26 | G,J |
| 13982-30-4 | Ce-139 | -0.034 +/- 0.077 | 0.136 | U,G |
| 14762-78-8 | Ce-144 | -0.09 +/- 0.43 | 0.76 | U,G |
| 14093-03-9 | Co-56 | 0.51 +/- 0.25 | 0.33 | G,TI |
| 13981-50-5 | Co-57 | 0.034 +/- 0.052 | 0.087 | U,G |
| 13981-38-9 | Co-58 | -0.09 +/- 0.12 | 0.23 | U,G |
| 10198-40-0 | Co-60 | -0.016 +/- 0.080 | 0.156 | U,G |
| 14392-02-0 | Cr-51 | 0.4 +/- 2.0 | 3.4 | U,G |
| 13967-70-9 | Cs-134 | 0.013 +/- 0.072 | 0.127 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-07 Lab ID: 0405096-17 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 400 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041060D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.32 +/- 0.12 | 0.14 | G |
| 14683-23-9 | Eu-152 | 0.50 +/- 0.43 | 0.64 | U,G |
| 15585-10-1 | Eu-154 | 0.12 +/- 0.41 | 0.74 | U,G |
| 14391-16-3 | Eu-155 | 0.10 +/- 0.21 | 0.35 | U,G |
| 14596-12-4 | Fe-59 | 0.02 +/- 0.29 | 0.54 | U,G |
| 10043-66-0 | I-131 | -3.5 +/- 5.7 | 10.8 | U,G |
| 13966-00-2 | K-40 | 13.8 +/- 2.7 | 1.5 | G |
| 13966-31-9 | Mn-54 | 0.017 +/- 0.093 | 0.165 | U,G |
| 13966-32-0 | Na-22 | 0.038 +/- 0.077 | 0.133 | U,G |
| 14681-63-1 | Nb-94 | -0.049 +/- 0.078 | 0.149 | U,G |
| 13967-76-5 | Nb-95 | -0.15 +/- 0.21 | 0.41 | U,G |
| 15100-28-4 | Pa-234m | 0 +/- 13 | 24 | U,G |
| 15092-94-1 | Pb-212 | 2.06 +/- 0.33 | 0.21 | G |
| 15067-28-4 | Pb-214 | 3.39 +/- 0.48 | 0.25 | G,J |
| 13967-48-1 | Ru-106 | 0.23 +/- 0.69 | 1.20 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-07 Lab ID: 0405096-17 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 400 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041060D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.01 +/- 0.13 | 0.23 | U,G |
| 14234-35-6 | Sb-125 | 0.09 +/- 0.21 | 0.40 | U,G |
| 13967-63-0 | Sc-46 | 0.01 +/- 0.12 | 0.22 | U,G |
| 15623-47-9 | Th-227 | 0.24 +/- 0.44 | 0.74 | U,G |
| 15065-10-8 | Th-234 | 3.8 +/- 1.0 | 1.6 | G |
| 14913-50-9 | Tl-208 | 0.62 +/- 0.15 | 0.13 | G |
| 15117-96-1 | U-235 | -0.13 +/- 0.38 | 0.68 | U,G |
| 13982-39-3 | Zn-65 | 0.38 +/- 0.46 | 0.76 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 half-lives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-08 Lab ID: 0405096-18 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 116 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041051D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 34.1 +/- 4.2 | 1.8 | M3,G |
| 14391-76-5 | Ag-110m | 0.05 +/- 0.36 | 0.59 | U,G |
| 14682-66-7 | Al-26 | -0.01 +/- 0.27 | 0.46 | U,G |
| 14596-10-2 | Am-241 | 1.61 +/- 0.70 | 1.08 | G,TI |
| 13966-02-4 | Be-7 | 0.6 +/- 2.8 | 4.7 | U,G |
| 14913-49-6 | Bi-212 | 32.7 +/- 5.7 | 5.6 | G |
| 14733-03-0 | Bi-214 | 39.1 +/- 4.7 | 0.7 | G,J |
| 13982-30-4 | Ce-139 | -0.23 +/- 0.21 | 0.35 | U,G |
| 14762-78-8 | Ce-144 | 0.2 +/- 1.2 | 2.1 | U,G |
| 14093-03-9 | Co-56 | 7.4 +/- 1.2 | 1.1 | G,TI |
| 13981-50-5 | Co-57 | -0.18 +/- 0.16 | 0.27 | U,G |
| 13981-38-9 | Co-58 | -0.41 +/- 0.52 | 0.89 | U,G |
| 10198-40-0 | Co-60 | -0.08 +/- 0.29 | 0.50 | U,G |
| 14392-02-0 | Cr-51 | -3.5 +/- 4.8 | 8.2 | U,G |
| 13967-70-9 | Cs-134 | -0.7 +/- 2.9 | 4.8 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-08 Lab ID: 0405096-18 Library: KENT_FANP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-B Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 116 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041051D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | -0.12 +/- 0.37 | 0.62 | U,G |
| 14683-23-9 | Eu-152 | 5.9 +/- 2.8 | 4.4 | G, TI |
| 15585-10-1 | Eu-154 | -1.8 +/- 1.9 | 3.3 | U,G |
| 14391-16-3 | Eu-155 | 0.68 +/- 0.74 | 1.20 | U,G |
| 14596-12-4 | Fe-59 | -0.3 +/- 1.1 | 1.8 | U,G |
| 10043-66-0 | I-131 | 19 +/- 17 | 27 | U,G |
| 13966-00-2 | K-40 | 19.5 +/- 4.4 | 5.5 | G |
| 13966-31-9 | Mn-54 | 0.48 +/- 0.23 | 0.34 | G, SI |
| 13966-32-0 | Na-22 | 0.14 +/- 0.43 | 0.70 | U,G |
| 14681-63-1 | Nb-94 | 0.27 +/- 0.22 | 0.36 | U,G |
| 13967-76-5 | Nb-95 | 2.29 +/- 0.57 | 0.75 | G, TI |
| 15100-28-4 | Pa-234m | 93 +/- 39 | 58 | G |
| 15092-94-1 | Pb-212 | 26.8 +/- 3.2 | 0.7 | G |
| 15067-28-4 | Pb-214 | 43.2 +/- 5.1 | 0.7 | G, J |
| 13967-48-1 | Ru-106 | 0 +/- 2.0 | 3.3 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

Client Project ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-08 Lab ID: 0405096-18 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 27-Jun-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 116 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041051D10A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -1.5 +/- 1.0 | 8.5 | U,G |
| 14234-35-6 | Sb-125 | 0.72 +/- 0.53 | 0.85 | U,G |
| 13967-63-0 | Sc-46 | -0.13 +/- 0.35 | 0.59 | U,G |
| 15623-47-9 | Th-227 | 19 +/- 32 | 53 | U,G |
| 15065-10-8 | Th-234 | 59.8 +/- 7.9 | 6.1 | G |
| 14913-50-9 | Tl-208 | 8.8 +/- 1.1 | 0.4 | G |
| 15117-96-1 | U-235 | 3.4 +/- 1.4 | 2.1 | G,TI |
| 13982-39-3 | Zn-65 | -4.1 +/- 1.3 | 2.2 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

Client Project ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-09 Lab ID: 0405096-19 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 124 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041128D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 5.96 +/- 0.95 | 0.86 | M3,G |
| 14391-76-5 | Ag-110m | -0.04 +/- 0.13 | 0.23 | U,G |
| 14682-66-7 | Al-26 | 0.004 +/- 0.087 | 0.177 | U,G |
| 14596-10-2 | Am-241 | -0.31 +/- 0.83 | 1.47 | U,G |
| 13966-02-4 | Be-7 | -0.1 +/- 1.8 | 3.2 | U,G |
| 14913-49-6 | Bi-212 | 7.2 +/- 2.5 | 2.8 | G |
| 14733-03-0 | Bi-214 | 5.62 +/- 0.84 | 0.40 | G,J |
| 13982-30-4 | Ce-139 | -0.06 +/- 0.10 | 0.18 | U,G |
| 14762-78-8 | Ce-144 | 0.23 +/- 0.66 | 1.12 | U,G |
| 14093-03-9 | Co-56 | 1.11 +/- 0.53 | 0.72 | G, TI |
| 13981-50-5 | Co-57 | 0.005 +/- 0.083 | 0.142 | U,G |
| 13981-38-9 | Co-58 | -0.12 +/- 0.19 | 0.37 | U,G |
| 10198-40-0 | Co-60 | -0.01 +/- 0.11 | 0.22 | U,G |
| 14392-02-0 | Cr-51 | -1.8 +/- 3.1 | 5.7 | U,G |
| 13967-70-9 | Cs-134 | 0.074 +/- 0.085 | 0.187 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-09 Lab ID: 0405096-19 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 124 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041128D02A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.04 +/- 0.14 | 0.23 | U,G |
| 14683-23-9 | Eu-152 | 0.42 +/- 0.71 | 1.20 | U,G |
| 15585-10-1 | Eu-154 | -0.65 +/- 0.68 | 1.38 | U,G |
| 14391-16-3 | Eu-155 | 0.49 +/- 0.42 | 0.67 | U,G |
| 14596-12-4 | Fe-59 | -0.13 +/- 0.55 | 1.04 | U,G |
| 10043-66-0 | I-131 | -1 +/- 15 | 26 | U,G |
| 13966-00-2 | K-40 | 22.7 +/- 4.2 | 2.3 | G |
| 13966-31-9 | Mn-54 | 0.08 +/- 0.14 | 0.24 | U,G |
| 13966-32-0 | Na-22 | 0.08 +/- 0.14 | 0.23 | U,G |
| 14681-63-1 | Nb-94 | -0.02 +/- 0.13 | 0.23 | U,G |
| 13967-76-5 | Nb-95 | -0.14 +/- 0.27 | 0.49 | U,G |
| 15100-28-4 | Pa-234m | 25 +/- 21 | 31 | U,G |
| 15092-94-1 | Pb-212 | 5.46 +/- 0.76 | 0.34 | G |
| 15067-28-4 | Pb-214 | 6.36 +/- 0.87 | 0.45 | G,J |
| 13967-48-1 | Ru-106 | 1.7 +/- 1.1 | 1.7 | G,TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-09 Lab ID: 0405096-19 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 05-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 124 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041128D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.04 +/- 0.19 | 0.36 | U,G |
| 14234-35-6 | Sb-125 | 0.28 +/- 0.30 | 0.53 | U,G |
| 13967-63-0 | Sc-46 | -0.08 +/- 0.19 | 0.37 | U,G |
| 15623-47-9 | Th-227 | 5 +/- 21 | 35 | U,G |
| 15065-10-8 | Th-234 | 11.2 +/- 3.0 | 4.2 | G |
| 14913-50-9 | Tl-208 | 1.68 +/- 0.30 | 0.22 | G |
| 15117-96-1 | U-235 | 0.67 +/- 0.71 | 1.16 | U,G |
| 13982-39-3 | Zn-65 | 0.02 +/- 0.76 | 1.30 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halfives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-10 Lab ID: 0405096-20 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 417 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041076D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 1.73 +/- 0.35 | 0.37 | M3,G |
| 14391-76-5 | Ag-110m | -0.009 +/- 0.074 | 0.136 | U,G |
| 14682-66-7 | Al-26 | 0.088 +/- 0.068 | 0.090 | U,G |
| 14596-10-2 | Am-241 | -0.07 +/- 0.55 | 0.97 | U,G |
| 13966-02-4 | Be-7 | -0.45 +/- 0.89 | 1.69 | U,G |
| 14913-49-6 | Bi-212 | 1.6 +/- 1.0 | 1.4 | G |
| 14733-03-0 | Bi-214 | 2.33 +/- 0.39 | 0.24 | G,J |
| 13982-30-4 | Ce-139 | 0.030 +/- 0.063 | 0.107 | U,G |
| 14762-78-8 | Ce-144 | -0.22 +/- 0.38 | 0.68 | U,G |
| 14093-03-9 | Co-56 | 0.33 +/- 0.22 | 0.31 | G,TI |
| 13981-50-5 | Co-57 | -0.003 +/- 0.051 | 0.090 | U,G |
| 13981-38-9 | Co-58 | -0.11 +/- 0.10 | 0.21 | U,G |
| 10198-40-0 | Co-60 | 0.044 +/- 0.052 | 0.082 | U,G |
| 14392-02-0 | Cr-51 | 1.3 +/- 1.9 | 3.1 | U,G |
| 13967-70-9 | Cs-134 | 0.062 +/- 0.058 | 0.091 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-10 Lab ID: 0405096-20 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 417 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041076D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 10045-97-3 | Cs-137 | 0.25 +/- 0.10 | 0.14 | G |
| 14683-23-9 | Eu-152 | 0.34 +/- 0.32 | 0.48 | U,G |
| 15585-10-1 | Eu-154 | -0.06 +/- 0.28 | 0.56 | U,G |
| 14391-16-3 | Eu-155 | -0.03 +/- 0.21 | 0.37 | U,G |
| 14596-12-4 | Fe-59 | -0.08 +/- 0.25 | 0.49 | U,G |
| 10043-66-0 | I-131 | 1.1 +/- 5.9 | 10.2 | U,G |
| 13966-00-2 | K-40 | 10.9 +/- 2.1 | 1.1 | G |
| 13966-31-9 | Mn-54 | 0.041 +/- 0.068 | 0.116 | U,G |
| 13966-32-0 | Na-22 | 0.012 +/- 0.072 | 0.131 | U,G |
| 14681-63-1 | Nb-94 | 0.004 +/- 0.067 | 0.120 | U,G |
| 13967-76-5 | Nb-95 | -0.01 +/- 0.18 | 0.32 | U,G |
| 15100-28-4 | Pa-234m | 5.9 +/- 8.7 | 14.6 | U,G |
| 15092-94-1 | Pb-212 | 1.96 +/- 0.31 | 0.20 | G |
| 15067-28-4 | Pb-214 | 2.87 +/- 0.41 | 0.21 | G,J |
| 13967-48-1 | Ru-106 | 0.27 +/- 0.66 | 1.13 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SSED-10 Lab ID: 0405096-20 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 04-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Date Analyzed: 26-Jun-04 | Final Aliquot: 417 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g Report Basis: Dry Weight File Name: 041076D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 14683-10-4 | Sb-124 | 0.01 +/- 0.10 | 0.18 | U,G |
| 14234-35-6 | Sb-125 | 0.07 +/- 0.17 | 0.31 | U,G |
| 13967-63-0 | Sc-46 | 0.091 +/- 0.097 | 0.154 | U,G |
| 15623-47-9 | Th-227 | 0.17 +/- 0.38 | 0.64 | U,G |
| 15065-10-8 | Th-234 | 3.2 +/- 1.5 | 2.2 | G,TI |
| 14913-50-9 | Tl-208 | 0.49 +/- 0.13 | 0.14 | G |
| 15117-96-1 | U-235 | 0.05 +/- 0.37 | 0.63 | U,G |
| 13982-39-3 | Zn-65 | 0.33 +/- 0.38 | 0.62 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: GEN-02 Lab ID: 0405096-22 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 331 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041074D03A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 6.6 +/- 1.0 | 1.0 | M3,G |
| 14391-76-5 | Ag-110m | -0.12 +/- 0.19 | 0.36 | U,G |
| 14682-66-7 | Al-26 | 0.05 +/- 0.13 | 0.23 | U,G |
| 14596-10-2 | Am-241 | 0.2 +/- 1.2 | 2.0 | U,G |
| 13966-02-4 | Be-7 | 1.0 +/- 2.1 | 3.4 | U,G |
| 14913-49-6 | Bi-212 | 5.4 +/- 2.6 | 3.8 | G |
| 14733-03-0 | Bi-214 | 8.7 +/- 1.2 | 0.5 | G,J |
| 13982-30-4 | Ce-139 | -0.04 +/- 0.16 | 0.27 | U,G |
| 14762-78-8 | Ce-144 | 0.47 +/- 0.57 | 0.94 | U,G |
| 14093-03-9 | Co-56 | 1.18 +/- 0.59 | 0.85 | G, TI |
| 13981-50-5 | Co-57 | -0.04 +/- 0.12 | 0.20 | U,G |
| 13981-38-9 | Co-58 | -0.27 +/- 0.21 | 0.40 | U,G |
| 10198-40-0 | Co-60 | -0.11 +/- 0.16 | 0.31 | U,G |
| 14392-02-0 | Cr-51 | 0.8 +/- 3.5 | 5.9 | U,G |
| 13967-70-9 | Cs-134 | 0.126 +/- 0.094 | 0.186 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: GEN-02 Lab ID: 0405096-22 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 331 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041074D03A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.43 +/- 0.18 | 0.26 | G |
| 14683-23-9 | Eu-152 | 0.60 +/- 0.83 | 1.38 | U,G |
| 15585-10-1 | Eu-154 | -0.40 +/- 0.81 | 1.50 | U,G |
| 14391-16-3 | Eu-155 | 0.46 +/- 0.47 | 0.77 | U,G |
| 14596-12-4 | Fe-59 | 0.17 +/- 0.53 | 0.93 | U,G |
| 10043-66-0 | I-131 | 7.4 +/- 8.7 | 14.1 | U,G |
| 13966-00-2 | K-40 | 22.7 +/- 4.2 | 2.9 | G |
| 13966-31-9 | Mn-54 | 0.06 +/- 0.16 | 0.27 | U,G |
| 13966-32-0 | Na-22 | -0.12 +/- 0.16 | 0.30 | U,G |
| 14681-63-1 | Nb-94 | 0.07 +/- 0.13 | 0.22 | U,G |
| 13967-76-5 | Nb-95 | -0.53 +/- 0.40 | 0.75 | U,G |
| 15100-28-4 | Pa-234m | 22 +/- 24 | 38 | U,G |
| 15092-94-1 | Pb-212 | 6.71 +/- 0.91 | 0.47 | G |
| 15067-28-4 | Pb-214 | 10.5 +/- 1.3 | 0.5 | G,J |
| 13967-48-1 | Ru-106 | -1.0 +/- 1.3 | 2.4 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|--|---|--|
| Field ID: GEN-02 Lab ID: 0405096-22 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 331 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041074D03A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.11 +/- 0.21 | 0.38 | U,G |
| 14234-35-6 | Sb-125 | 0.54 +/- 0.37 | 0.64 | U,G |
| 13967-63-0 | Sc-46 | 0.01 +/- 0.20 | 0.35 | U,G |
| 15623-47-9 | Th-227 | 5 +/- 19 | 30 | U,G |
| 15065-10-8 | Th-234 | 13.6 +/- 3.5 | 5.0 | G |
| 14913-50-9 | Tl-208 | 2.06 +/- 0.34 | 0.23 | G |
| 15117-96-1 | U-235 | 0.72 +/- 0.84 | 1.38 | U,G |
| 13982-39-3 | Zn-65 | -0.61 +/- 0.60 | 1.14 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-01 Lab ID: 0405096-25 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 34.4 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041082D10A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 15.4 +/- 2.4 | 2.8 | M3,G |
| 14391-76-5 | Ag-110m | -1.13 +/- 0.68 | 1.25 | U,G |
| 14682-66-7 | Al-26 | 0.04 +/- 0.40 | 0.71 | U,G |
| 14596-10-2 | Am-241 | 0.11 +/- 0.84 | 1.42 | U,G |
| 13966-02-4 | Be-7 | -1.9 +/- 4.2 | 7.5 | U,G |
| 14913-49-6 | Bi-212 | 12.4 +/- 6.7 | 10.1 | G |
| 14733-03-0 | Bi-214 | 12.5 +/- 1.9 | 1.5 | G,J |
| 13982-30-4 | Ce-139 | 0.05 +/- 0.25 | 0.42 | U,G |
| 14762-78-8 | Ce-144 | -1.0 +/- 1.6 | 2.7 | U,G |
| 14093-03-9 | Co-56 | 1.7 +/- 1.5 | 2.4 | U,G |
| 13981-50-5 | Co-57 | -0.03 +/- 0.19 | 0.32 | U,G |
| 13981-38-9 | Co-58 | -0.67 +/- 0.61 | 1.11 | U,G |
| 10198-40-0 | Co-60 | 0.40 +/- 0.42 | 0.67 | U,G |
| 14392-02-0 | Cr-51 | -2.1 +/- 7.1 | 12.5 | U,G |
| 13967-70-9 | Cs-134 | 0.29 +/- 0.29 | 0.46 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-01 Lab ID: 0405096-25 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 34.4 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041082D10A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 3.37 +/- 0.70 | 0.73 | G |
| 14683-23-9 | Eu-152 | 0 +/- 2.1 | 3.7 | U,G |
| 15585-10-1 | Eu-154 | 2.0 +/- 2.0 | 3.2 | U,G |
| 14391-16-3 | Eu-155 | 0.22 +/- 0.87 | 1.47 | U,G |
| 14596-12-4 | Fe-59 | -1.6 +/- 1.8 | 3.2 | U,G |
| 10043-66-0 | I-131 | 23 +/- 29 | 48 | U,G |
| 13966-00-2 | K-40 | 2.2 +/- 5.1 | 8.6 | U,G |
| 13966-31-9 | Mn-54 | 0.01 +/- 0.43 | 0.73 | U,G |
| 13966-32-0 | Na-22 | -0.24 +/- 0.44 | 0.81 | U,G |
| 14681-63-1 | Nb-94 | 0.12 +/- 0.33 | 0.56 | U,G |
| 13967-76-5 | Nb-95 | 0.21 +/- 0.69 | 1.16 | U,G |
| 15100-28-4 | Pa-234m | 50 +/- 59 | 97 | U,G |
| 15092-94-1 | Pb-212 | 14.8 +/- 1.9 | 0.8 | G |
| 15067-28-4 | Pb-214 | 14.0 +/- 1.9 | 1.1 | G,J |
| 13967-48-1 | Ru-106 | -1.4 +/- 3.3 | 5.8 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 65 of 87

003117

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-01 Lab ID: 0405096-25 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 34.4 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041082D10A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -1.6 +/- 1.5 | 10.6 | U,G |
| 14234-35-6 | Sb-125 | 0.62 +/- 0.73 | 1.29 | U,G |
| 13967-63-0 | Sc-46 | 0.17 +/- 0.50 | 0.85 | U,G |
| 15623-47-9 | Th-227 | 7 +/- 49 | 81 | U,G |
| 15065-10-8 | Th-234 | 30.4 +/- 5.9 | 8.2 | G |
| 14913-50-9 | Tl-208 | 4.99 +/- 0.82 | 0.66 | G |
| 15117-96-1 | U-235 | 1.2 +/- 1.3 | 2.0 | U,G |
| 13982-39-3 | Zn-65 | -1.5 +/- 1.6 | 2.9 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 half-lives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|---|--|
| Field ID: SOIL-02 Lab ID: 0405096-26 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6B Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 32.1 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041215D04A |
|---|---|---|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 9.6 +/- 2.0 | 2.5 | M3,G |
| 14391-76-5 | Ag-110m | 0 +/- 0.51 | 0.92 | U,G |
| 14682-66-7 | Al-26 | -0.27 +/- 0.47 | 1.02 | U,G |
| 14596-10-2 | Am-241 | -0.8 +/- 1.4 | 2.6 | U,G |
| 13966-02-4 | Be-7 | 1.6 +/- 5.1 | 8.9 | U,G |
| 14913-49-6 | Bi-212 | 15.1 +/- 7.6 | 10.3 | G |
| 14733-03-0 | Bi-214 | 9.0 +/- 1.7 | 1.1 | G,J |
| 13982-30-4 | Ce-139 | -0.19 +/- 0.24 | 0.45 | U,G |
| 14762-78-8 | Ce-144 | 0.5 +/- 1.4 | 2.5 | U,G |
| 14093-03-9 | Co-56 | 1.0 +/- 1.3 | 2.1 | U,G |
| 13981-50-5 | Co-57 | 0.12 +/- 0.20 | 0.34 | U,G |
| 13981-38-9 | Co-58 | 0.64 +/- 0.47 | 0.64 | U,G |
| 10198-40-0 | Co-60 | -0.03 +/- 0.41 | 0.80 | U,G |
| 14392-02-0 | Cr-51 | 0 +/- 7.0 | 12.7 | U,G |
| 13967-70-9 | Cs-134 | 0.5 +/- 3.7 | 6.1 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-02 Lab ID: 0405096-26 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 32.1 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041215D04A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 2.74 +/- 0.74 | 0.74 | G |
| 14683-23-9 | Eu-152 | 2.8 +/- 2.6 | 4.0 | U,G |
| 15585-10-1 | Eu-154 | -1.1 +/- 2.0 | 4.1 | U,G |
| 14391-16-3 | Eu-155 | 0.21 +/- 0.85 | 1.47 | U,G |
| 14596-12-4 | Fe-59 | 0.1 +/- 1.4 | 2.6 | U,G |
| 10043-66-0 | I-131 | -26 +/- 41 | 77 | U,G |
| 13966-00-2 | K-40 | 5.2 +/- 4.6 | 6.9 | U,G |
| 13966-31-9 | Mn-54 | -0.21 +/- 0.34 | 0.70 | U,G |
| 13966-32-0 | Na-22 | -0.16 +/- 0.39 | 0.81 | U,G |
| 14681-63-1 | Nb-94 | 0.07 +/- 0.39 | 0.70 | U,G |
| 13967-76-5 | Nb-95 | 0.79 +/- 0.70 | 1.08 | U,G |
| 15100-28-4 | Pa-234m | 63 +/- 55 | 81 | U,G |
| 15092-94-1 | Pb-212 | 11.0 +/- 1.7 | 0.9 | G |
| 15067-28-4 | Pb-214 | 10.2 +/- 1.6 | 1.2 | G,J |
| 13967-48-1 | Ru-106 | 3.1 +/- 3.9 | 6.4 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 68 of 87

000113

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-02 Lab ID: 0405096-26 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 32.1 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041215D04A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.14 +/- 0.63 | 1.17 | U,G |
| 14234-35-6 | Sb-125 | 0.60 +/- 0.85 | 1.54 | U,G |
| 13967-63-0 | Sc-46 | -0.22 +/- 0.57 | 1.11 | U,G |
| 15623-47-9 | Th-227 | 13 +/- 42 | 69 | U,G |
| 15065-10-8 | Th-234 | 20.3 +/- 7.3 | 11.3 | G |
| 14913-50-9 | Tl-208 | 3.13 +/- 0.72 | 0.65 | G |
| 15117-96-1 | U-235 | 1.1 +/- 1.2 | 1.9 | U,G |
| 13982-39-3 | Zn-65 | -0.5 +/- 1.9 | 3.3 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-04 Lab ID: 0405096-27 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-B Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 54.5 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041122D03A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 82 +/- 10 | 5 | M3,G |
| 14391-76-5 | Ag-110m | 0.28 +/- 0.78 | 1.31 | U,G |
| 14682-66-7 | Al-26 | -0.30 +/- 0.75 | 1.37 | U,G |
| 14596-10-2 | Am-241 | 4.6 +/- 5.4 | 8.9 | U,G |
| 13966-02-4 | Be-7 | 2 +/- 12 | 20 | U,G |
| 14913-49-6 | Bi-212 | 82 +/- 17 | 17 | G |
| 14733-03-0 | Bi-214 | 138 +/- 19 | 9 | G,J |
| 13982-30-4 | Ce-139 | -0.9 +/- 1.2 | 1.9 | U,G |
| 14762-78-8 | Ce-144 | -3.4 +/- 4.3 | 7.3 | U,G |
| 14093-03-9 | Co-56 | 12.6 +/- 5.2 | 7.4 | G, TI |
| 13981-50-5 | Co-57 | 0.40 +/- 0.57 | 0.93 | U,G |
| 13981-38-9 | Co-58 | 0.1 +/- 1.7 | 2.8 | U,G |
| 10198-40-0 | Co-60 | 0.07 +/- 0.81 | 1.39 | U,G |
| 14392-02-0 | Cr-51 | 0 +/- 29 | 48 | U,G |
| 13967-70-9 | Cs-134 | -0.3 +/- 1.0 | 1.7 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 70 of 87

000115

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-04 Lab ID: 0405096-27 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 54.5 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041122D03A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.4 +/- 1.1 | 1.8 | U,G |
| 14683-23-9 | Eu-152 | 17.9 +/- 8.8 | 12.4 | G, TI |
| 15585-10-1 | Eu-154 | -13.2 +/- 7.0 | 13.0 | U,G |
| 14391-16-3 | Eu-155 | 5.0 +/- 2.2 | 3.4 | G, SI |
| 14596-12-4 | Fe-59 | -5.1 +/- 3.5 | 6.4 | U,G |
| 10043-66-0 | I-131 | 27 +/- 76 | 127 | U,G |
| 13966-00-2 | K-40 | 12.6 +/- 8.6 | 13.4 | U,G |
| 13966-31-9 | Mn-54 | 0.11 +/- 0.93 | 1.57 | U,G |
| 13966-32-0 | Na-22 | -0.2 +/- 1.3 | 2.3 | U,G |
| 14681-63-1 | Nb-94 | 0.73 +/- 0.75 | 1.22 | U,G |
| 13967-76-5 | Nb-95 | 3.2 +/- 2.2 | 3.3 | U,G |
| 15100-28-4 | Pa-234m | 680 +/- 170 | 200 | G |
| 15092-94-1 | Pb-212 | 94 +/- 11 | 2 | G |
| 15067-28-4 | Pb-214 | 159 +/- 19 | 2 | G,J |
| 13967-48-1 | Ru-106 | -4.3 +/- 6.7 | 11.8 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-04 Lab ID: 0405096-27 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 54.5 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041122D03A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-----|---------------|
| 14683-10-4 | Sb-124 | 0.8 +/- 1.2 | 2.1 | U,G |
| 14234-35-6 | Sb-125 | 1.2 +/- 2.1 | 3.5 | U,G |
| 13967-63-0 | Sc-46 | -0.3 +/- 1.2 | 2.0 | U,G |
| 15623-47-9 | Th-227 | 21.2 +/- 6.0 | 8.5 | G,SI |
| 15065-10-8 | Th-234 | 527 +/- 64 | 23 | G |
| 14913-50-9 | Tl-208 | 27.2 +/- 3.5 | 1.3 | G |
| 15117-96-1 | U-235 | 23.9 +/- 4.5 | 6.3 | G |
| 13982-39-3 | Zn-65 | -5.8 +/- 3.1 | 5.8 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-05 Lab ID: 0405096-28 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 48.1 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041053D07A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 53.3 +/- 7.1 | 3.7 | M3,G |
| 14391-76-5 | Ag-110m | -0.63 +/- 0.72 | 1.32 | U,G |
| 14682-66-7 | Al-26 | 0.31 +/- 0.67 | 1.15 | U,G |
| 14596-10-2 | Am-241 | 1.08 +/- 0.92 | 1.49 | U,G |
| 13966-02-4 | Be-7 | -1.2 +/- 9.8 | 17.0 | U,G |
| 14913-49-6 | Bi-212 | 51 +/- 14 | 16 | G |
| 14733-03-0 | Bi-214 | 61.5 +/- 7.8 | 2.0 | G,J |
| 13982-30-4 | Ce-139 | -0.21 +/- 0.53 | 0.91 | U,G |
| 14762-78-8 | Ce-144 | -0.7 +/- 3.0 | 5.1 | U,G |
| 14093-03-9 | Co-56 | 4.5 +/- 3.8 | 5.7 | U,G |
| 13981-50-5 | Co-57 | -0.02 +/- 0.38 | 0.65 | U,G |
| 13981-38-9 | Co-58 | -0.14 +/- 0.83 | 1.51 | U,G |
| 10198-40-0 | Co-60 | -0.24 +/- 0.70 | 1.31 | U,G |
| 14392-02-0 | Cr-51 | 1 +/- 16 | 27 | U,G |
| 13967-70-9 | Cs-134 | 0.51 +/- 0.47 | 1.02 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|--|---|---|
| Field ID: SOIL-05 Lab ID: 0405096-28 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 48.1 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041053D07A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.41 +/- 0.73 | 1.21 | U,G |
| 14683-23-9 | Eu-152 | 10.7 +/- 4.0 | 4.6 | G, TI |
| 15585-10-1 | Eu-154 | -5.3 +/- 3.6 | 7.1 | U,G |
| 14391-16-3 | Eu-155 | 3.3 +/- 1.8 | 2.9 | G, SI |
| 14596-12-4 | Fe-59 | -1.6 +/- 2.8 | 5.2 | U,G |
| 10043-66-0 | I-131 | 23 +/- 63 | 106 | U,G |
| 13966-00-2 | K-40 | 4.2 +/- 7.2 | 12.1 | U,G |
| 13966-31-9 | Mn-54 | 0.17 +/- 0.73 | 1.25 | U,G |
| 13966-32-0 | Na-22 | -0.32 +/- 0.65 | 1.23 | U,G |
| 14681-63-1 | Nb-94 | -0.01 +/- 0.63 | 1.09 | U,G |
| 13967-76-5 | Nb-95 | -1.8 +/- 1.9 | 3.5 | U,G |
| 15100-28-4 | Pa-234m | 60 +/- 110 | 190 | U,G |
| 15092-94-1 | Pb-212 | 60.6 +/- 7.4 | 1.4 | G |
| 15067-28-4 | Pb-214 | 63.8 +/- 7.8 | 2.1 | G,J |
| 13967-48-1 | Ru-106 | 4.8 +/- 6.0 | 9.9 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

G - Sample density differs by more than 15% of LCS density.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

Client Project ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-05 Lab ID: 0405096-28 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 06-May-04 Date Prepared: 01-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Date Analyzed: 01-Jul-04 | Final Aliquot: 48.1 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g Report Basis: Dry Weight File Name: 041053D07A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 0.4 +/- 1.0 | 1.7 | U,G |
| 14234-35-6 | Sb-125 | -0.5 +/- 1.4 | 2.5 | U,G |
| 13967-63-0 | Sc-46 | 0.47 +/- 0.88 | 1.48 | U,G |
| 15623-47-9 | Th-227 | 5.7 +/- 3.0 | 4.5 | G |
| 15065-10-8 | Th-234 | 127 +/- 17 | 11 | G |
| 14913-50-9 | Tl-208 | 16.0 +/- 2.3 | 1.1 | G |
| 15117-96-1 | U-235 | 8.2 +/- 3.2 | 4.7 | G,TI |
| 13982-39-3 | Zn-65 | -3.4 +/- 2.1 | 4.4 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 75 of 87

000120

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|---|--|
| Field ID: SOIL-07 Lab ID: 0405096-29 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 385 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041077D02A |
|---|---|---|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 12.8 +/- 1.7 | 0.8 | M3,G |
| 14391-76-5 | Ag-110m | 0.05 +/- 0.12 | 0.20 | U,G |
| 14682-66-7 | Al-26 | -0.062 +/- 0.092 | 0.191 | U,G |
| 14596-10-2 | Am-241 | 0.2 +/- 1.1 | 1.8 | U,G |
| 13966-02-4 | Be-7 | 0.6 +/- 1.6 | 2.7 | U,G |
| 14913-49-6 | Bi-212 | 14.1 +/- 3.1 | 3.0 | G |
| 14733-03-0 | Bi-214 | 5.66 +/- 0.80 | 0.39 | G,J |
| 13982-30-4 | Ce-139 | -0.04 +/- 0.12 | 0.20 | U,G |
| 14762-78-8 | Ce-144 | 0.03 +/- 0.75 | 1.27 | U,G |
| 14093-03-9 | Co-56 | 0.69 +/- 0.32 | 0.42 | G,TI |
| 13981-50-5 | Co-57 | 0.01 +/- 0.10 | 0.17 | U,G |
| 13981-38-9 | Co-58 | -0.06 +/- 0.17 | 0.31 | U,G |
| 10198-40-0 | Co-60 | 0.11 +/- 0.11 | 0.17 | U,G |
| 14392-02-0 | Cr-51 | -0.6 +/- 2.8 | 4.9 | U,G |
| 13967-70-9 | Cs-134 | 0.219 +/- 0.095 | 0.195 | G,TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-07 Lab ID: 0405096-29 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 385 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041077D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 1.00 +/- 0.22 | 0.23 | G |
| 14683-23-9 | Eu-152 | 0.59 +/- 0.56 | 0.87 | U,G |
| 15585-10-1 | Eu-154 | -0.66 +/- 0.58 | 1.13 | U,G |
| 14391-16-3 | Eu-155 | 0.78 +/- 0.43 | 0.66 | G,TI |
| 14596-12-4 | Fe-59 | -0.30 +/- 0.44 | 0.83 | U,G |
| 10043-66-0 | I-131 | 3.1 +/- 8.6 | 14.4 | U,G |
| 13966-00-2 | K-40 | 29.6 +/- 4.5 | 1.9 | G |
| 13966-31-9 | Mn-54 | 0.06 +/- 0.14 | 0.23 | U,G |
| 13966-32-0 | Na-22 | 0.03 +/- 0.11 | 0.20 | U,G |
| 14681-63-1 | Nb-94 | 0.17 +/- 0.13 | 0.19 | U,G |
| 13967-76-5 | Nb-95 | -0.10 +/- 0.31 | 0.55 | U,G |
| 15100-28-4 | Pa-234m | 16 +/- 18 | 30 | U,G |
| 15092-94-1 | Pb-212 | 12.8 +/- 1.6 | 0.4 | G |
| 15067-28-4 | Pb-214 | 6.18 +/- 0.83 | 0.46 | G,J |
| 13967-48-1 | Ru-106 | -0.4 +/- 1.1 | 2.0 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-07 Lab ID: 0405096-29 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 385 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041077D02A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.12 +/- 0.19 | 0.35 | U,G |
| 14234-35-6 | Sb-125 | -0.02 +/- 0.34 | 0.58 | U,G |
| 13967-63-0 | Sc-46 | -0.15 +/- 0.16 | 0.31 | U,G |
| 15623-47-9 | Th-227 | 0.17 +/- 0.79 | 1.33 | U,G |
| 15065-10-8 | Th-234 | 10.6 +/- 3.0 | 4.4 | G |
| 14913-50-9 | Tl-208 | 4.16 +/- 0.56 | 0.20 | G |
| 15117-96-1 | U-235 | 0.43 +/- 0.53 | 0.86 | U,G |
| 13982-39-3 | Zn-65 | 0.17 +/- 0.40 | 0.66 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 78 of 87

000123

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|--|---|---|
| Field ID: SOIL-08 Lab ID: 0405096-30 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 45.8 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041214D04A |
| Library: KENT_FANP | | | |

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 65.0 +/- 8.3 | 4.3 | M3,G |
| 14391-76-5 | Ag-110m | -0.80 +/- 0.71 | 1.28 | U,G |
| 14682-66-7 | Al-26 | -0.50 +/- 0.68 | 1.30 | U,G |
| 14596-10-2 | Am-241 | 1.1 +/- 3.3 | 5.5 | U,G |
| 13966-02-4 | Be-7 | -7.3 +/- 9.4 | 16.6 | U,G |
| 14913-49-6 | Bi-212 | 66 +/- 14 | 15 | G |
| 14733-03-0 | Bi-214 | 93 +/- 11 | 2 | G,J |
| 13982-30-4 | Ce-139 | -0.06 +/- 0.50 | 0.85 | U,G |
| 14762-78-8 | Ce-144 | 2.1 +/- 2.3 | 3.7 | U,G |
| 14093-03-9 | Co-56 | 0.7 +/- 4.2 | 7.0 | U,G |
| 13981-50-5 | Co-57 | 0 +/- 0.41 | 0.70 | U,G |
| 13981-38-9 | Co-58 | 0 +/- 0.90 | 1.57 | U,G |
| 10198-40-0 | Co-60 | 0.17 +/- 0.75 | 1.28 | U,G |
| 14392-02-0 | Cr-51 | -11 +/- 15 | 26 | U,G |
| 13967-70-9 | Cs-134 | 2.61 +/- 0.98 | 1.42 | G,TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-08 Lab ID: 0405096-30 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 45.8 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041214D04A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.8 +/- 1.0 | 1.6 | U,G |
| 14683-23-9 | Eu-152 | 11.4 +/- 4.3 | 5.6 | G, TI |
| 15585-10-1 | Eu-154 | -3.4 +/- 5.3 | 9.5 | U,G |
| 14391-16-3 | Eu-155 | 4.2 +/- 2.6 | 4.2 | U,G |
| 14596-12-4 | Fe-59 | -4.8 +/- 2.7 | 5.1 | U,G |
| 10043-66-0 | I-131 | 28 +/- 58 | 97 | U,G |
| 13966-00-2 | K-40 | 25 +/- 10 | 14 | G |
| 13966-31-9 | Mn-54 | -0.02 +/- 0.78 | 1.35 | U,G |
| 13966-32-0 | Na-22 | -0.38 +/- 0.65 | 1.20 | U,G |
| 14681-63-1 | Nb-94 | 1.09 +/- 0.64 | 0.98 | G, TI |
| 13967-76-5 | Nb-95 | -2.8 +/- 2.0 | 3.6 | U,G |
| 15100-28-4 | Pa-234m | 430 +/- 130 | 150 | G |
| 15092-94-1 | Pb-212 | 67.2 +/- 8.2 | 1.5 | G |
| 15067-28-4 | Pb-214 | 102 +/- 12 | 2 | G,J |
| 13967-48-1 | Ru-106 | -2.4 +/- 5.8 | 10.1 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|--|
| Field ID: SOIL-08 Lab ID: 0405096-30 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 01-Jul-04 Library: KENT_FANP | Prep Batch: GS040601-6 QCBatchID: GS040601-6-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 45.8 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041214D04A |
|---|---|--|--|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.1 +/- 1.1 | 1.9 | U,G |
| 14234-35-6 | Sb-125 | 0.2 +/- 1.5 | 2.6 | U,G |
| 13967-63-0 | Sc-46 | 0.37 +/- 0.94 | 1.59 | U,G |
| 15623-47-9 | Th-227 | 6.3 +/- 2.8 | 4.2 | G,SI |
| 15065-10-8 | Th-234 | 309 +/- 39 | 16 | G |
| 14913-50-9 | Tl-208 | 18.9 +/- 2.5 | 1.1 | G |
| 15117-96-1 | U-235 | 14.0 +/- 3.0 | 4.7 | G |
| 13982-39-3 | Zn-65 | -2.4 +/- 2.2 | 4.1 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 81 of 87

000123

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041061D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|-------|---------------|
| 15262-20-1 | Ra-228 | 9.1 +/- 1.3 | 0.7 | M3,G |
| 14391-76-5 | Ag-110m | -0.05 +/- 0.19 | 0.34 | U,G |
| 14682-66-7 | Al-26 | 0.02 +/- 0.10 | 0.19 | U,G |
| 14596-10-2 | Am-241 | 0.49 +/- 0.29 | 0.45 | G,TI |
| 13966-02-4 | Be-7 | 1.9 +/- 1.9 | 3.0 | U,G |
| 14913-49-6 | Bi-212 | 7.8 +/- 2.4 | 2.8 | G |
| 14733-03-0 | Bi-214 | 6.6 +/- 1.4 | 1.2 | G,J |
| 13982-30-4 | Ce-139 | -0.14 +/- 0.13 | 0.23 | U,G |
| 14762-78-8 | Ce-144 | 0.25 +/- 0.71 | 1.19 | U,G |
| 14093-03-9 | Co-56 | 0.71 +/- 0.37 | 0.51 | G,TI |
| 13981-50-5 | Co-57 | -0.012 +/- 0.088 | 0.150 | U,G |
| 13981-38-9 | Co-58 | 0.01 +/- 0.18 | 0.32 | U,G |
| 10198-40-0 | Co-60 | -0.02 +/- 0.11 | 0.21 | U,G |
| 14392-02-0 | Cr-51 | 2.5 +/- 3.0 | 4.9 | U,G |
| 13967-70-9 | Cs-134 | 0.186 +/- 0.096 | 0.202 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 82 of 87

000127

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041061D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.96 +/- 0.22 | 0.23 | G |
| 14683-23-9 | Eu-152 | 0.38 +/- 0.61 | 1.02 | U,G |
| 15585-10-1 | Eu-154 | -0.37 +/- 0.64 | 1.20 | U,G |
| 14391-16-3 | Eu-155 | 0.78 +/- 0.49 | 0.77 | G,SI |
| 14596-12-4 | Fe-59 | -0.61 +/- 0.46 | 0.92 | U,G |
| 10043-66-0 | I-131 | -0.6 +/- 7.4 | 13.0 | U,G |
| 13966-00-2 | K-40 | 29.1 +/- 4.7 | 2.1 | G |
| 13966-31-9 | Mn-54 | 0.07 +/- 0.15 | 0.25 | U,G |
| 13966-32-0 | Na-22 | 0.05 +/- 0.13 | 0.22 | U,G |
| 14681-63-1 | Nb-94 | -0.04 +/- 0.12 | 0.21 | U,G |
| 13967-76-5 | Nb-95 | -0.09 +/- 0.33 | 0.59 | U,G |
| 15100-28-4 | Pa-234m | 23 +/- 20 | 31 | U,G |
| 15092-94-1 | Pb-212 | 10.0 +/- 1.3 | 0.4 | G |
| 15067-28-4 | Pb-214 | 7.24 +/- 0.95 | 0.40 | G,J |
| 13967-48-1 | Ru-106 | 0 +/- 1.1 | 2.0 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 83 of 87

000123

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041061D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | 0.06 +/- 0.21 | 0.36 | U,G |
| 14234-35-6 | Sb-125 | 0.07 +/- 0.33 | 0.56 | U,G |
| 13967-63-0 | Sc-46 | -0.14 +/- 0.17 | 0.32 | U,G |
| 15623-47-9 | Th-227 | 0.48 +/- 0.70 | 1.16 | U,G |
| 15065-10-8 | Th-234 | 12.5 +/- 2.3 | 2.9 | G |
| 14913-50-9 | Tl-208 | 3.04 +/- 0.44 | 0.19 | G |
| 15117-96-1 | U-235 | 0.34 +/- 0.66 | 1.10 | U,G |
| 13982-39-3 | Zn-65 | 0.05 +/- 0.40 | 0.69 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Date Printed: Wednesday, July 21, 2004

Paragon Analytics

LIMS Version: 5.041A

Page 84 of 87

000123

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | |
|-----------|---------------|
| Field ID: | SOIL-09 |
| Lab ID: | 0405096-31DUP |

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 01-Jun-04
Date Analyzed: 26-Jun-04

Prep Batch: GS040601-7
QCBatchID: GS040601-7-1
Run ID: GS040601-6B
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 372 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041075D03A

Library: KENT_FANP

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 9.5 +/- 1.3 | 0.9 | M3,G |
| 14391-76-5 | Ag-110m | -0.10 +/- 0.20 | 0.37 | U,G |
| 14682-66-7 | Al-26 | 0.06 +/- 0.13 | 0.22 | U,G |
| 14596-10-2 | Am-241 | 0.4 +/- 1.1 | 1.9 | U,G |
| 13966-02-4 | Be-7 | -0.4 +/- 2.0 | 3.4 | U,G |
| 14913-49-6 | Bi-212 | 11.7 +/- 2.9 | 3.1 | G |
| 14733-03-0 | Bi-214 | 5.8 +/- 1.4 | 1.7 | G,J |
| 13982-30-4 | Ce-139 | -0.06 +/- 0.15 | 0.26 | U,G |
| 14762-78-8 | Ce-144 | 0.73 +/- 0.91 | 1.48 | U,G |
| 14093-03-9 | Co-56 | 0.92 +/- 0.44 | 0.61 | G,TI |
| 13981-50-5 | Co-57 | 0 +/- 0.12 | 0.20 | U,G |
| 13981-38-9 | Co-58 | -0.17 +/- 0.19 | 0.35 | U,G |
| 10198-40-0 | Co-60 | 0.01 +/- 0.15 | 0.27 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D03A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14392-02-0 | Cr-51 | -2.1 +/- 3.6 | 6.4 | U,G |
| 13967-70-9 | Cs-134 | 0.20 +/- 0.11 | 0.22 | U,G |
| 10045-97-3 | Cs-137 | 0.70 +/- 0.20 | 0.25 | G |
| 14683-23-9 | Eu-152 | 0.13 +/- 0.72 | 1.27 | U,G |
| 15585-10-1 | Eu-154 | 0.04 +/- 0.70 | 1.24 | U,G |
| 14391-16-3 | Eu-155 | 0.53 +/- 0.55 | 0.89 | U,G |
| 14596-12-4 | Fe-59 | 0.13 +/- 0.52 | 0.90 | U,G |
| 10043-66-0 | I-131 | 5.6 +/- 8.6 | 14.3 | U,G |
| 13966-00-2 | K-40 | 28.0 +/- 4.6 | 2.7 | G |
| 13966-31-9 | Mn-54 | 0.06 +/- 0.15 | 0.26 | U,G |
| 13966-32-0 | Na-22 | -0.09 +/- 0.17 | 0.31 | U,G |
| 14681-63-1 | Nb-94 | 0.01 +/- 0.14 | 0.25 | U,G |
| 13967-76-5 | Nb-95 | -0.24 +/- 0.38 | 0.68 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

SQ - Spectral quality prevents accurate quantitation.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

SI - Nuclide identification and/or quantitation is tentative.

Y2 - Chemical Yield outside default limits.

TI - Nuclide identification is tentative.

LT - Result is less than Requested MDC, greater than sample specific MDC.

R - Nuclide has exceeded 8 halflives.

M - The requested MDC was not met.

G - Sample density differs by more than 15% of LCS density.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|--|---|--|---|
| Field ID: SOIL-09 Lab ID: 0405096-31DUP | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 372 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041075D03A |
|--|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15100-28-4 | Pa-234m | -4 +/- 22 | 40 | U,G |
| 15092-94-1 | Pb-212 | 10.2 +/- 1.3 | 0.4 | G |
| 15067-28-4 | Pb-214 | 7.50 +/- 0.99 | 0.47 | G,J |
| 13967-48-1 | Ru-106 | -1.5 +/- 1.3 | 2.4 | U,G |
| 14683-10-4 | Sb-124 | 0.25 +/- 0.23 | 0.36 | U,G |
| 14234-35-6 | Sb-125 | 0.21 +/- 0.38 | 0.68 | U,G |
| 13967-63-0 | Sc-46 | 0 +/- 0.18 | 0.31 | U,G |
| 15623-47-9 | Th-227 | 4 +/- 24 | 39 | U,G |
| 15065-10-8 | Th-234 | 11.6 +/- 3.3 | 4.4 | G,TI |
| 14913-50-9 | Tl-208 | 2.98 +/- 0.44 | 0.23 | G |
| 15117-96-1 | U-235 | 0.58 +/- 0.53 | 0.85 | U,G |
| 13982-39-3 | Zn-65 | -0.24 +/- 0.53 | 0.95 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-10 Lab ID: 0405096-32 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 342 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041062D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 15262-20-1 | Ra-228 | 122 +/- 14 | 3 | M3,G |
| 14391-76-5 | Ag-110m | 0.12 +/- 0.43 | 0.76 | U,G |
| 14682-66-7 | Al-26 | 0.18 +/- 0.39 | 0.65 | U,G |
| 14596-10-2 | Am-241 | 3.1 +/- 1.5 | 2.4 | G |
| 13966-02-4 | Be-7 | 2.2 +/- 6.3 | 10.5 | U,G |
| 14913-49-6 | Bi-212 | 127 +/- 17 | 10 | G |
| 14733-03-0 | Bi-214 | 152 +/- 18 | 1 | G,J |
| 13982-30-4 | Ce-139 | 0.26 +/- 0.51 | 0.83 | U,G |
| 14762-78-8 | Ce-144 | -2.2 +/- 2.7 | 4.5 | U,G |
| 14093-03-9 | Co-56 | 3.0 +/- 3.4 | 5.5 | U,G |
| 13981-50-5 | Co-57 | 0.16 +/- 0.34 | 0.56 | U,G |
| 13981-38-9 | Co-58 | -0.21 +/- 0.61 | 1.04 | U,G |
| 10198-40-0 | Co-60 | -0.13 +/- 0.44 | 0.75 | U,G |
| 14392-02-0 | Cr-51 | -1 +/- 12 | 20 | U,G |
| 13967-70-9 | Cs-134 | 1.88 +/- 0.40 | 0.71 | G,TI |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-10 Lab ID: 0405096-32 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 342 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041062D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 10045-97-3 | Cs-137 | 0.11 +/- 0.67 | 1.12 | U,G |
| 14683-23-9 | Eu-152 | 12.7 +/- 4.8 | 6.8 | G,TI |
| 15585-10-1 | Eu-154 | 0.6 +/- 2.3 | 5.4 | U,G |
| 14391-16-3 | Eu-155 | 9.0 +/- 2.0 | 2.6 | G,SI |
| 14596-12-4 | Fe-59 | -2.7 +/- 2.1 | 3.7 | U,G |
| 10043-66-0 | I-131 | -11 +/- 29 | 48 | U,G |
| 13966-00-2 | K-40 | 23.7 +/- 5.9 | 7.3 | G |
| 13966-31-9 | Mn-54 | 2.32 +/- 0.56 | 0.70 | G,SI |
| 13966-32-0 | Na-22 | 0.06 +/- 0.42 | 0.71 | U,G |
| 14681-63-1 | Nb-94 | 0.60 +/- 0.46 | 0.74 | U,G |
| 13967-76-5 | Nb-95 | 1.4 +/- 1.0 | 1.6 | U,G |
| 15100-28-4 | Pa-234m | 287 +/- 73 | 91 | G |
| 15092-94-1 | Pb-212 | 125 +/- 15 | 1 | G |
| 15067-28-4 | Pb-214 | 166 +/- 19 | 1 | G,J |
| 13967-48-1 | Ru-106 | -0.5 +/- 4.2 | 7.1 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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Abbreviations:

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MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405096-1

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405096

Client Name: Kent & Sullivan Inc.

ClientProject ID: Ross Adams

| | | | |
|---|---|--|---|
| Field ID: SOIL-10 Lab ID: 0405096-32 | Sample Matrix: SOIL Prep SOP: PAI 739 Rev 8 Date Collected: 07-May-04 Date Prepared: 01-Jun-04 Date Analyzed: 26-Jun-04 Library: KENT_FANP | Prep Batch: GS040601-7 QCBatchID: GS040601-7-1 Run ID: GS040601-6B Count Time: 30 minutes Report Basis: Dry Weight | Final Aliquot: 342 g Prep Basis: Dry Weight Moisture(%): NA Result Units: pCi/g File Name: 041062D08A |
|---|---|--|---|

| CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier |
|------------|----------------|--------------------|------|---------------|
| 14683-10-4 | Sb-124 | -0.36 +/- 0.70 | 1.19 | U,G |
| 14234-35-6 | Sb-125 | 0.4 +/- 1.3 | 2.1 | U,G |
| 13967-63-0 | Sc-46 | 0.09 +/- 0.64 | 1.08 | U,G |
| 15623-47-9 | Th-227 | 9.2 +/- 2.8 | 4.1 | G,SI |
| 15065-10-8 | Th-234 | 107 +/- 14 | 12 | G |
| 14913-50-9 | Tl-208 | 37.8 +/- 4.5 | 0.7 | G |
| 15117-96-1 | U-235 | 9.6 +/- 2.3 | 4.2 | G |
| 13982-39-3 | Zn-65 | -1.9 +/- 1.3 | 2.3 | U,G |

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

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SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405096-1

PARAGON ANALYTICS
Radiochemistry Data Package

Section 4

4

RAW DATA

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-1 GS040601-6

Code: 041132D10A

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/03/2004 13:19:02 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time. | 1.39E+003 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 60000 Sec |
| Sample Size . | 5.52E+001 g | Real Time . | 60145 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 041132D10.SPC |

Detector #: 10 (Detector 10)
 Energy(keV) = -1.27 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/03/2004
 FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.27 | 94.89 | 1205 | 164 | 122 | 2930 | 1.09 | a |
| 2 | 53.67 | 109.68 | 187 | 151 | 122 | 2930 | 1.14 | b |
| 3 | 63.22 | 128.73 | 1022 | 158 | 119 | 2800 | 1.09 | a |
| 4 | 66.05 | 134.37 | 657 | 154 | 119 | 2800 | 1.11 | b |
| 5 | 74.64 | 151.52 | 1196 | 175 | 133 | 3250 | 1.35 | a |
| 6 | 76.96 | 156.16 | 1798 | 182 | 133 | 3250 | 1.33 | b |
| 7 | 84.39 | 170.99 | 348 | 148 | 118 | 2573 | 1.36 | a HiResid |
| 8 | 87.15 | 176.51 | 624 | 139 | 107 | 2251 | 1.10 | b HiResid |
| 9 | 92.55 | 187.29 | 2282 | 207 | 151 | 3538 | 1.74 | c HiResid |
| 10 | 98.47 | 199.10 | 141 | 159 | 129 | 2895 | 1.43 | d HiResid |
| 11 | 129.02 | 260.08 | 106 | 152 | 124 | 2657 | 1.44 | a NET< CL |
| 12 | 139.72 | 281.44 | 647 | 159 | 124 | 2655 | 1.52 | a |
| 13 | 143.83 | 289.64 | 274 | 154 | 124 | 2655 | 1.48 | b |
| 14 | 185.80 | 373.41 | 1666 | 168 | 121 | 2543 | 1.40 | a |
| 15 | 198.37 | 398.51 | 825 | 145 | 109 | 2208 | 1.37 | a |
| 16 | 238.73 | 479.08 | 1592 | 161 | 115 | 2432 | 1.60 | a |
| 17 | 241.85 | 485.29 | 1138 | 146 | 106 | 2189 | 1.50 | b |
| 18 | 295.30 | 591.99 | 2097 | 161 | 109 | 2191 | 1.62 | a |
| 19 | 327.51 | 656.28 | 70 | 98 | 79 | 1370 | 1.08 | a NET< CL |
| 20 | 338.55 | 678.32 | 308 | 110 | 86 | 1508 | 1.37 | a |
| 21 | 352.08 | 705.32 | 3928 | 178 | 104 | 1887 | 1.83 | a |
| 22 | 479.93 | 960.53 | 38 | 146 | 120 | 2203 | 2.85 | a NET< CL |
| 23 | 511.22 | 1022.99 | 5019 | 214 | 132 | 2494 | 3.18 | a |
| 24 | 558.79 | 1117.94 | 704 | 112 | 81 | 1280 | 1.77 | a |

041132D10.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 570.01 | 1140.34 | 334 | 112 | 87 | 1396 | 2.02 | b |
| 26 | 583.75 | 1167.76 | 702 | 123 | 91 | 1480 | 2.13 | a |
| 27 | 601.73 | 1203.65 | 1749 | 319 | 253 | 5351 | 6.74 | a Wide Pk |
| 28 | 609.67 | 1219.51 | 3647 | 195 | 126 | 2349 | 3.02 | b |
| 29 | 662.07 | 1324.10 | 1432 | 155 | 111 | 1832 | 2.87 | a |
| 30 | 694.24 | 1388.33 | 305 | 168 | 135 | 2378 | 3.53 | a |
| 31 | 727.74 | 1455.19 | 131 | 106 | 85 | 1234 | 2.22 | a |
| 32 | 768.70 | 1536.96 | 368 | 136 | 108 | 1559 | 3.48 | a |
| 33 | 803.79 | 1606.99 | 449 | 125 | 96 | 1376 | 2.94 | a |
| 34 | 898.43 | 1795.90 | 209 | 101 | 80 | 1008 | 2.61 | a Wide Pk |
| 35 | 900.06 | 1799.15 | 74 | 270 | 221 | 3339 | 8.69 | b NET< CL |
| 36 | 911.66 | 1822.31 | 565 | 112 | 84 | 1071 | 2.86 | c |
| 37 | 933.66 | 1866.23 | 108 | 102 | 83 | 1041 | 2.86 | a |
| 38 | 970.04 | 1938.84 | 77 | 69 | 55 | 636 | 1.54 | a |
| 39 | 1120.50 | 2239.18 | 636 | 132 | 100 | 1265 | 3.72 | a |
| 40 | 1239.02 | 2475.76 | 212 | 98 | 77 | 867 | 3.02 | a |
| 41 | 1378.99 | 2755.15 | 121 | 66 | 52 | 453 | 2.32 | a |
| 42 | 1460.83 | 2918.52 | 3316 | 156 | 87 | 819 | 4.71 | a HiResid |
| 43 | 1729.01 | 3453.83 | 160 | 88 | 69 | 532 | 4.58 | a |
| 44 | 1764.45 | 3524.58 | 682 | 102 | 72 | 537 | 5.01 | a |

041132D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET100702.BKG (0419002-10 Weekly Bkg.)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.27 | 1205 | 164 | 122 | 175 | 373 | 306 | NET<CL |
| 2 | 53.67 | 187 | 151 | 122 | -48 | 310 | 255 | NET<CL |
| 3 | 63.22 | 1022 | 158 | 119 | 102 | 384 | 316 | NET<CL |
| 4 | 66.05 | 657 | 154 | 119 | -51 | 330 | 272 | NET<CL |
| 5 | 74.64 | 1196 | 175 | 133 | 268 | 393 | 322 | NET<CL |
| 6 | 76.96 | 1798 | 182 | 133 | 433 | 382 | 312 | |
| 8 | 87.15 | 624 | 139 | 107 | 184 | 322 | 264 | NET<CL |
| 9 | 92.55 | 2282 | 207 | 151 | 434 | 426 | 348 | |
| 11 | 129.02 | 106 | 152 | 124 | -8 | 263 | 216 | NET<CL |
| 12 | 139.72 | 647 | 159 | 124 | 95 | 301 | 247 | NET<CL |
| 13 | 143.83 | 274 | 154 | 124 | 70 | 289 | 237 | NET<CL |
| 14 | 185.80 | 1666 | 168 | 121 | 287 | 357 | 293 | NET<CL |
| 15 | 198.37 | 825 | 145 | 109 | 62 | 295 | 242 | NET<CL |
| 16 | 238.73 | 1592 | 161 | 115 | 579 | 320 | 260 | |
| 17 | 241.85 | 1138 | 146 | 106 | 263 | 309 | 253 | |
| 18 | 295.30 | 2097 | 161 | 109 | 245 | 330 | 270 | NET<CL |
| 20 | 338.55 | 308 | 110 | 86 | 91 | 249 | 204 | NET<CL |
| 21 | 352.08 | 3928 | 178 | 104 | 500 | 390 | 319 | |
| 23 | 511.22 | 5019 | 214 | 132 | 200 | 464 | 381 | NET<CL |
| 24 | 558.79 | 704 | 112 | 81 | 157 | 240 | 196 | NET<CL |
| 25 | 570.01 | 334 | 112 | 87 | 136 | 307 | 252 | NET<CL |
| 26 | 583.75 | 702 | 123 | 91 | 278 | 282 | 230 | |
| 27 | 601.73 | 1749 | 319 | 253 | -72 | 664 | 546 | NET<CL |
| 28 | 609.67 | 3647 | 195 | 126 | 372 | 409 | 335 | |
| 30 | 694.24 | 305 | 168 | 135 | -106 | 366 | 302 | NET<CL |
| 32 | 768.70 | 368 | 136 | 108 | 90 | 271 | 222 | NET<CL |
| 33 | 803.79 | 449 | 125 | 96 | -1 | 294 | 242 | NET<CL |
| 34 | 898.43 | 209 | 101 | 80 | -102 | 275 | 226 | NET<CL |
| 36 | 911.66 | 565 | 112 | 84 | 273 | 231 | 188 | |
| 37 | 933.66 | 108 | 102 | 83 | 17 | 189 | 156 | NET<CL |
| 38 | 970.04 | 77 | 69 | 55 | -92 | 176 | 146 | NET<CL |
| 39 | 1120.50 | 636 | 132 | 100 | 104 | 241 | 198 | NET<CL |
| 40 | 1239.02 | 212 | 98 | 77 | 71 | 195 | 159 | NET<CL |
| 41 | 1378.99 | 121 | 66 | 52 | -51 | 214 | 176 | NET<CL |
| 42 | 1460.83 | 3316 | 156 | 87 | 2162 | 270 | 208 | |
| 43 | 1729.01 | 160 | 88 | 69 | 70 | 206 | 169 | NET<CL |
| 44 | 1764.45 | 682 | 102 | 72 | 62 | 231 | 190 | NET<CL |

041132D10.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-1 GS040601-6

Code: 041132D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/03/2004 13:19:02 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.39e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 5.52e+001 g | Real Time | 60145 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041132D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

 Detector #: 10 (Detector 10)

Efficiency File: (D10) (Sh11).EFF (Geo 11 Eff Cal)

$$\text{Eff} = 10^{[-6.88E+00 + 5.45E+00 * L + -1.24E+00 * L^2 + 0.00E+00 * L^3]} \quad 05/24/2004$$

$$\text{Eff.} = \text{EXP}[2.17E+00 + -8.06E-01 * \text{En} + -5.16E-04 * \text{En}^2] \quad \text{Above} \quad 180.00 \text{ keV}$$

 Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)
 ==========
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | N | ENERGY (keV) | E | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|---|--------------|---|-----------------------|---|-----------|----------------|----------------|
| Th-234 | | 92.50 | | 5.86E-01 +- 5.75E-01 | | 9.45E-01 | 4.71E-01 | 3.92E+13 |
| U-235 | | 143.76 | N | 4.16E-02 +- 1.70E-01 | | 2.81E-01 | 1.40E-01 | 6.17E+12 |
| Pb-212 | | 238.63 | | 1.11E-01 +- 6.13E-02 | | 1.00E-01 | 4.98E-02 | 1.67E+04 |
| Pb-214 | | 351.99 | | 1.44E-01 +- 1.13E-01 | | 1.85E-01 | 9.21E-02 | 1.40E+07 |
| Tl-208 | | 583.14 | | 5.32E-02 +- 5.39E-02 | | 8.85E-02 | 4.40E-02 | 1.27E+14 |
| Sb-124 | | 602.71 | N | -2.37E-02 +- 2.19E-01 | | 3.62E-01 | 1.81E-01 | 1.44E+03 |
| Bi-214 | | 609.32 | | 1.35E-01 +- 1.49E-01 | | 2.44E-01 | 1.22E-01 | 1.40E+07 |
| Cs-137 | | 661.62 | | 3.02E-01 +- 3.27E-02 | | 4.75E-02 | 2.35E-02 | 2.64E+05 |
| Bi-212 | | 727.17 | | 4.07E-01 +- 3.30E-01 | | 5.38E-01 | 2.65E-01 | 1.67E+04 |
| Ra-228 | | 911.07 | | 2.50E-01 +- 2.12E-01 | | 3.47E-01 | 1.72E-01 | 5.04E+04 |
| Co-56 | | 1238.28 | N | 5.27E-02 +- 1.45E-01 | | 2.39E-01 | 1.19E-01 | 1.86E+03 |
| K-40 | | 1460.75 | | 6.69E+00 +- 8.35E-01 | | 1.30E+00 | 6.45E-01 | 1.12E+13 |
| Am-241 | | 59.54 | N | -4.72E-02 +- 4.67E-02 | | 7.86E-02B | 3.89E-02 | 3.80E+06 |
| Eu-155 | | 105.31 | N | 4.63E-02 +- 4.60E-02 | | 7.54E-02 | 3.73E-02 | 4.35E+04 |
| Co-57 | | 122.07 | N | -2.71E-04 +- 1.23E-02 | | 2.04E-02 | 1.01E-02 | 6.48E+03 |
| Ce-144 | | 133.53 | N | -5.09E-02 +- 9.46E-02 | | 1.59E-01 | 7.84E-02 | 6.82E+03 |
| Ce-139 | | 165.85 | N | -6.58E-03 +- 1.59E-02 | | 2.66E-02 | 1.31E-02 | 3.30E+03 |
| Th-227 | | 236.00 | N | -3.66E-01 +- 1.33E-01 | | 2.31E-01R | 1.15E-01 | 1.90E+05 |
| Pa-231 | | 302.67 | N | -4.95E-02 +- 5.29E-01 | | 8.83E-01 | 4.36E-01 | 7.87E+05 |
| Cr-51 | | 320.07 | N | -3.42E-02 +- 5.33E-01 | | 8.90E-01 | 4.39E-01 | 6.65E+02 |
| I-131 | | 364.48 | N | 9.26E-01 +- 2.63E+00 | | 4.35E+00 | 2.15E+00 | 1.93E+02 |
| Sb-125 | | 427.95 | N | 4.57E-02 +- 5.22E-02 | | 8.58E-02 | 4.23E-02 | 2.43E+04 |
| Be-7 | | 477.56 | N | 4.62E-01 +- 3.19E-01 | | 5.18E-01 | 2.55E-01 | 1.28E+03 |
| Cs-134 | | 604.66 | N | -1.17E-02 +- 4.15E-02 | | 6.91E-02R | 3.43E-02 | 1.81E+04 |

041132D10.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| Ru-106 | 621.84 | N | 1.17E-01 | +- 2.54E-01 | 4.21E-01 | 2.08E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 8.05E-02 | +- 4.17E-02 | 7.19E-02R | 3.56E-02 | 6.00E+03 |
| Nb-94 | 702.50 | N | 1.13E-02 | +- 3.83E-02 | 6.32E-02R | 3.13E-02 | 1.78E+08 |
| Nb-95 | 765.82 | N | 5.31E-02 | +- 6.05E-02 | 1.03E-01R | 5.08E-02 | 1.54E+03 |
| Co-58 | 810.75 | N | 2.20E-02 | +- 5.94E-02 | 9.78E-02R | 4.84E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 8.01E-03 | +- 2.89E-02 | 4.79E-02 | 2.36E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 3.00E-02 | +- 4.13E-02 | 6.98E-02 | 3.44E-02 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 4.92E+00 | +- 4.54E+00 | 7.44E+00 | 3.66E+00 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 7.17E-02 | +- 1.52E-01 | 2.51E-01 | 1.24E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 9.09E-03 | +- 1.27E-01 | 2.11E-01 | 1.04E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 1.33E-01 | +- 1.02E-01 | 1.64E-01R | 8.09E-02 | 5.85E+03 |
| Na-22 | 1274.54 | N | 2.96E-02 | +- 3.44E-02 | 5.84E-02 | 2.88E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 2.03E-02 | +- 3.21E-02 | 5.30E-02 | 2.60E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 1.00E-01 | +- 1.66E-01 | 2.74E-01 | 1.35E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 2.39E-02 | +- 3.45E-02 | 5.70E-02 | 2.79E-02 | 6.31E+09 |

MEASURED TOTAL: 1.57E+01 +- 1.13E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 1 | 46.27 | 94.89 | 175 | 373 | 306 | 2930 | 1.09 | Deleted |
| 2 | 53.67 | 109.68 | -48 | 310 | 255 | 2930 | 1.14 | Deleted |
| 3 | 63.22 | 128.73 | 102 | 384 | 316 | 2800 | 1.09 | Deleted |
| 4 | 66.05 | 134.37 | -51 | 330 | 272 | 2800 | 1.11 | Deleted |
| 5 | 74.64 | 151.52 | 268 | 393 | 322 | 3250 | 1.35 | Deleted |
| 6 | 76.96 | 156.16 | 433 | 382 | 312 | 3250 | 1.33 | Unknown |
| 7 | 84.39 | 170.99 | 348 | 148 | 118 | 2573 | 1.36 | Unknown |
| 8 | 87.15 | 176.51 | 184 | 322 | 264 | 2251 | 1.10 | Deleted |
| 10 | 98.47 | 199.10 | 141 | 159 | 129 | 2895 | 1.43 | 1120DEsc |
| 11 | 129.02 | 260.08 | -8 | 263 | 216 | 2657 | 1.44 | Deleted |
| 12 | 139.72 | 281.44 | 95 | 301 | 247 | 2655 | 1.52 | Deleted |
| 14 | 185.80 | 373.41 | 287 | 357 | 293 | 2543 | 1.40 | Deleted |
| 15 | 198.37 | 398.51 | 62 | 295 | 242 | 2208 | 1.37 | Deleted |
| 17 | 241.85 | 485.29 | 263 | 309 | 253 | 2189 | 1.50 | Unknown |
| 18 | 295.30 | 591.99 | 245 | 330 | 270 | 2191 | 1.62 | Deleted |
| 19 | 327.51 | 656.28 | 70 | 98 | 79 | 1370 | 1.08 | Deleted |
| 20 | 338.55 | 678.32 | 91 | 249 | 204 | 1508 | 1.37 | Deleted |
| 22 | 479.93 | 960.53 | 38 | 146 | 120 | 2203 | 2.85 | Deleted |
| 23 | 511.22 | 1022.99 | 200 | 464 | 381 | 2494 | 3.18 | Deleted |
| 24 | 558.79 | 1117.94 | 157 | 240 | 196 | 1280 | 1.77 | Deleted |
| 25 | 570.01 | 1140.34 | 136 | 307 | 252 | 1396 | 2.02 | Deleted |
| 30 | 694.24 | 1388.33 | -106 | 366 | 302 | 2378 | 3.53 | Deleted |
| 32 | 768.70 | 1536.96 | 90 | 271 | 222 | 1559 | 3.48 | Deleted |
| 33 | 803.79 | 1606.99 | -1 | 294 | 242 | 1376 | 2.94 | Deleted |
| 34 | 898.43 | 1795.90 | -102 | 275 | 226 | 1008 | 2.61 | Deleted |

041132D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 35 | 900.06 | 1799.15 | 74 | 270 | 221 | 3339 | 8.69 | Deleted |
| 37 | 933.66 | 1866.23 | 17 | 189 | 156 | 1041 | 2.86 | Deleted |
| 38 | 970.04 | 1938.84 | -92 | 176 | 146 | 636 | 1.54 | Deleted |
| 39 | 1120.50 | 2239.18 | 104 | 241 | 198 | 1265 | 3.72 | Deleted |
| 41 | 1378.99 | 2755.15 | -51 | 214 | 176 | 453 | 2.32 | Deleted |
| 43 | 1729.01 | 3453.83 | 70 | 206 | 169 | 532 | 4.58 | Deleted |
| 44 | 1764.45 | 3524.58 | 62 | 231 | 190 | 537 | 5.01 | Deleted |

000141A

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-2 GS040601-7

Code: 041507D01A

 Sampling Start: 05/06/2004 12:00:00 | Counting Start: 06/26/2004 11:21:49
 Sampling Stop: 05/06/2004 12:00:00 | Decay Time. 1.22E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 36000 Sec
 Sample Size 2.23E+002 g | Real Time 36213 Sec
 Collection Efficiency 1.0000 | Spc. File 041507D01.SPC

 Detector #: 1 (Detector 1)
 Energy(keV) = -1.15 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004
 FWHM(keV) = 0.88 + 0.103*En + -3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004
 Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 46.40 | 94.94 | 39 | 120 | 98 | 2042 | 1.02 | a NET< CL HiResid |
| 2 | 53.43 | 109.00 | 2 | 105 | 86 | 1701 | 0.75 | b NET< CL HiResid |
| 3 | 57.94 | 118.00 | 2 | 105 | 86 | 1701 | 0.75 | c NET< CL HiResid |
| 4 | 63.48 | 129.07 | 220 | 177 | 144 | 3403 | 1.65 | d HiResid |
| 5 | 65.89 | 133.88 | 258 | 164 | 133 | 3062 | 1.43 | e HiResid |
| 6 | 74.60 | 151.28 | 238 | 113 | 90 | 1858 | 0.96 | a |
| 7 | 76.75 | 155.56 | 786 | 189 | 149 | 3716 | 2.01 | b |
| 8 | 92.65 | 187.32 | 1405 | 174 | 129 | 2932 | 1.80 | a |
| 9 | 139.79 | 281.46 | 329 | 123 | 96 | 1811 | 1.49 | a |
| 10 | 144.11 | 290.08 | 268 | 140 | 112 | 2213 | 1.86 | b |
| 11 | 163.28 | 328.37 | 31 | 78 | 64 | 998 | 0.90 | a NET< CL |
| 12 | 185.77 | 373.28 | 1155 | 159 | 118 | 2333 | 1.94 | a |
| 13 | 198.49 | 398.69 | 364 | 118 | 92 | 1778 | 1.42 | a |
| 14 | 238.60 | 478.78 | 1342 | 142 | 100 | 1928 | 1.78 | a |
| 15 | 241.72 | 485.02 | 345 | 127 | 100 | 1928 | 1.81 | b |
| 16 | 270.41 | 542.30 | 136 | 115 | 93 | 1653 | 1.84 | a |
| 17 | 295.18 | 591.76 | 756 | 122 | 90 | 1558 | 1.75 | a |
| 18 | 338.18 | 677.65 | 217 | 95 | 74 | 1165 | 1.51 | a |
| 19 | 351.82 | 704.89 | 1428 | 129 | 86 | 1358 | 2.04 | a |
| 20 | 463.53 | 927.97 | 85 | 67 | 53 | 659 | 1.16 | a |
| 21 | 511.13 | 1023.03 | 2729 | 169 | 110 | 1668 | 3.35 | a |

041507D01.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 22 | 558.50 | 1117.64 | 252 | 86 | 66 | 831 | 1.77 | a |
| 23 | 569.93 | 1140.45 | 77 | 64 | 51 | 607 | 1.17 | a |
| 24 | 583.15 | 1166.86 | 558 | 104 | 76 | 1036 | 2.16 | a |
| 25 | 601.59 | 1203.69 | 1134 | 259 | 205 | 3529 | 6.75 | a Wide Pk |
| 26 | 609.14 | 1218.76 | 1446 | 127 | 84 | 1205 | 2.22 | b |
| 27 | 661.70 | 1323.72 | 1435 | 112 | 68 | 816 | 2.20 | a |
| 28 | 726.93 | 1454.00 | 180 | 98 | 78 | 960 | 2.66 | a |
| 29 | 767.56 | 1535.12 | 84 | 158 | 129 | 1683 | 5.29 | a NET< CL Wide Pk |
| 30 | 803.51 | 1606.93 | 202 | 81 | 62 | 687 | 2.16 | a |
| 31 | 860.45 | 1720.64 | 65 | 74 | 59 | 651 | 1.90 | a |
| 32 | 898.19 | 1796.00 | 79 | 70 | 56 | 573 | 1.95 | a |
| 33 | 911.24 | 1822.06 | 477 | 82 | 57 | 581 | 2.10 | a |
| 34 | 969.02 | 1937.45 | 211 | 81 | 62 | 665 | 2.34 | a |
| 35 | 1001.39 | 2002.09 | 94 | 60 | 46 | 416 | 1.73 | a |
| 36 | 1063.51 | 2126.15 | 90 | 82 | 66 | 663 | 2.84 | a |
| 37 | 1120.00 | 2238.96 | 284 | 119 | 94 | 1004 | 4.48 | a Wide Pk |
| 38 | 1238.33 | 2475.27 | 95 | 64 | 50 | 468 | 1.94 | a |
| 39 | 1377.04 | 2752.28 | 25 | 83 | 68 | 548 | 4.11 | a NET< CL |
| 40 | 1460.93 | 2919.80 | 5721 | 164 | 53 | 385 | 3.26 | a HiResid |
| 41 | 1729.76 | 3456.67 | 51 | 35 | 26 | 126 | 1.88 | a |
| 42 | 1764.77 | 3526.59 | 324 | 62 | 42 | 250 | 3.14 | a |

041507D01.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET010625.BKG (0418003-31 Weekly Background)

Bkg.File Detector #: 1

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 2 | 53.43 | 2 | 105 | 86 | -105 | 237 | 196 | NET<CL |
| 4 | 63.48 | 220 | 177 | 144 | -12 | 282 | 232 | NET<CL |
| 5 | 65.89 | 258 | 165 | 133 | -183 | 277 | 229 | NET<CL |
| 8 | 92.65 | 1405 | 174 | 129 | 807 | 269 | 216 | |
| 9 | 139.79 | 329 | 123 | 96 | 129 | 187 | 153 | NET<CL |
| 10 | 144.11 | 268 | 140 | 112 | 205 | 196 | 159 | |
| 12 | 185.77 | 1155 | 159 | 118 | 724 | 233 | 186 | |
| 13 | 198.49 | 364 | 118 | 92 | -26 | 211 | 174 | NET<CL |
| 14 | 238.60 | 1342 | 142 | 100 | 1032 | 211 | 165 | |
| 17 | 295.18 | 756 | 122 | 90 | 703 | 161 | 125 | |
| 18 | 338.18 | 217 | 95 | 74 | 151 | 179 | 145 | |
| 19 | 351.82 | 1428 | 129 | 86 | 1238 | 202 | 156 | |
| 21 | 511.13 | 2729 | 169 | 110 | 169 | 300 | 246 | NET<CL |
| 22 | 558.50 | 252 | 86 | 66 | -37 | 153 | 127 | NET<CL |
| 23 | 569.93 | 77 | 64 | 51 | -39 | 172 | 142 | NET<CL |
| 24 | 583.15 | 558 | 104 | 76 | 330 | 181 | 146 | |
| 25 | 601.59 | 1134 | 259 | 205 | 300 | 410 | 336 | NET<CL |
| 26 | 609.14 | 1446 | 127 | 84 | 656 | 384 | 313 | |
| 30 | 803.51 | 202 | 81 | 62 | -17 | 146 | 121 | NET<CL |
| 32 | 898.19 | 79 | 70 | 56 | 18 | 135 | 111 | NET<CL |
| 33 | 911.24 | 477 | 82 | 57 | 247 | 130 | 104 | |
| 34 | 969.02 | 211 | 81 | 62 | 58 | 125 | 102 | NET<CL |
| 37 | 1120.00 | 284 | 119 | 94 | 225 | 137 | 110 | |
| 40 | 1460.93 | 5721 | 164 | 53 | 4424 | 212 | 136 | |
| 41 | 1729.76 | 51 | 35 | 26 | 15 | 72 | 59 | NET<CL |
| 42 | 1764.77 | 324 | 62 | 42 | 211 | 86 | 66 | |

041507D01.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0405096-2 GS040601-7

Code: 041507D01A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 06/26/2004 11:21:49 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.22e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 36000 Sec |
| Sample Size | 2.23e+002 g | Real Time | 36213 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041507D01.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 1 (Detector 1)

Efficiency File: (D01) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.08E-03*En^-3.09E+00 + 5.58E+01*En^5.94E-01] 06/18/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|------|-----------------------|-----------|----------------|----------------|
| Th-234 | | 92.50 | | 1.36E+00 +- 4.54E-01 | 7.35E-01 | 3.65E-01 | 3.92E+13 |
| U-235 | | 143.76 | | 1.34E-01 +- 1.28E-01 | 2.10E-01 | 1.04E-01 | 6.17E+12 |
| | | 185.72 | I.D. | | | | 6.17E+12 |
| Pb-212 | | 238.63 | | 2.08E-01 +- 4.23E-02 | 6.69E-02 | 3.32E-02 | 1.67E+04 |
| Pb-214 | Average:x | 3.39E-01 | | +- 4.51E-02 | | | 1.40E+07 |
| | | 295.22 | | 3.38E-01 +- 7.72E-02 | 1.21E-01 | 6.00E-02 | 1.40E+07 |
| | | 351.99 | | 3.40E-01 +- 5.55E-02 | 8.64E-02 | 4.28E-02 | 1.40E+07 |
| Ra-228 | Average:x | 1.64E-01 | | +- 7.93E-02 | | | 5.04E+04 |
| | | 338.40 | | 1.36E-01 +- 1.60E-01 | 2.64E-01 | 1.31E-01 | 5.04E+04 |
| | | 911.07 | | 1.73E-01 +- 9.12E-02 | 1.47E-01 | 7.28E-02 | 5.04E+04 |
| Sb-125 | Average:x | 3.15E-02 | | +- 3.62E-02 | | | 2.43E+04 |
| | | 463.51 | | 9.97E-02 +- 7.91E-02 | 1.28E-01 | 6.26E-02 | 2.43E+04 |
| | | 427.95 | N | 1.33E-02 +- 4.08E-02 | 6.77E-02 | 3.33E-02 | 2.43E+04 |
| Tl-208 | Average:x | 5.60E-02 | | +- 2.81E-02 | | | 1.27E+14 |
| | | 583.14 | | 5.33E-02 +- 2.93E-02 | 4.76E-02 | 2.36E-02 | 1.27E+14 |
| | | 860.47 | | 8.93E-02 +- 1.02E-01 | 1.68E-01 | 8.21E-02 | 1.27E+14 |
| Sb-124 | | 602.71 | N | 7.66E-02 +- 1.05E-01 | 1.72E-01 | 8.57E-02 | 1.44E+03 |
| Bi-214 | Average:x | 2.29E-01 | | +- 9.82E-02 | | | 1.40E+07 |
| | | 609.32 | | 1.99E-01 +- 1.17E-01 | 1.91E-01 | 9.51E-02 | 1.40E+07 |
| | | 1120.28 | | 2.99E-01 +- 1.82E-01 | 2.96E-01 | 1.46E-01 | 1.40E+07 |
| Cs-137 | | 661.62 | | 2.49E-01 +- 1.94E-02 | 2.40E-02 | 1.18E-02 | 2.64E+05 |
| Bi-212 | | 727.17 | | 4.47E-01 +- 2.45E-01 | 3.94E-01 | 1.94E-01 | 1.67E+04 |
| Pa-234m | | 1001.03 | | 3.01E+00 +- 1.90E+00 | 3.05E+00 | 1.48E+00 | 3.92E+13 |
| Co-56 | | 1238.28 | | 4.73E-02 +- 3.20E-02 | 5.16E-02 | 2.51E-02 | 1.86E+03 |
| K-40 | | 1460.75 | | 9.46E+00 +- 4.54E-01 | 5.88E-01 | 2.91E-01 | 1.12E+13 |

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------------|-------------------|----------|
| Am-241 | 59.54 | N | 4.20E-02 | +- 9.04E-02 | 1.49E-01B | 7.39E-02 | 3.80E+06 |
| Eu-155 | 105.31 | N | 1.17E-02 | +- 5.27E-02 | 8.80E-02 | 4.35E-02 | 4.35E+04 |
| Co-57 | 122.07 | N | 1.05E-02 | +- 1.29E-02 | 2.13E-02 | 1.05E-02 | 6.48E+03 |
| Ce-144 | 133.53 | N | 5.94E-02 | +- 1.02E-01 | 1.72E-01B | 8.48E-02 | 6.82E+03 |
| Ce-139 | 165.85 | N | 8.17E-04 | +- 1.59E-02 | 2.65E-02 | 1.31E-02 | 3.30E+03 |
| Th-227 | 236.00 | N | 3.02E-01 | +- 1.19E-01 | 1.86E-01R | 9.19E-02 | 1.90E+05 |
| Cr-51 | 320.07 | N | 7.29E-02 | +- 3.90E-01 | 6.49E-01 | 3.20E-01 | 6.65E+02 |
| I-131 | 364.48 | N | 2.99E-01 | +- 1.17E+00 | 1.94E+00 | 9.54E-01 | 1.93E+02 |
| Be-7 | 477.56 | N | 1.45E-01 | +- 2.22E-01 | 3.66E-01 | 1.80E-01 | 1.28E+03 |
| Cs-134 | 604.66 | N | 6.27E-02 | +- 1.82E-01 | 2.99E-01P | 1.49E-01 | 1.81E+04 |
| Ru-106 | 621.84 | N | 5.12E-02 | +- 1.70E-01 | 2.86E-01 | 1.41E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 6.35E-02 | +- 2.42E-02 | 4.32E-02R | 2.14E-02 | 6.00E+03 |
| Nb-94 | 702.50 | N | 8.77E-03 | +- 1.62E-02 | 2.73E-02 | 1.34E-02 | 1.78E+08 |
| Nb-95 | 765.82 | N | 5.02E-02 | +- 2.47E-02 | 3.95E-02 | 1.94E-02 | 1.54E+03 |
| Co-58 | 810.75 | N | 1.79E-02 | +- 2.13E-02 | 3.50E-02b | 1.71E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 1.04E-02 | +- 3.14E-02 | 5.23E-02 | 2.59E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.40E-02 | +- 2.12E-02 | 3.62E-02 | 1.77E-02 | 2.01E+03 |
| Eu-154 | 1004.80 | N | 8.82E-02 | +- 1.15E-01 | 1.97E-01r | 9.73E-02 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 1.85E-02 | +- 5.75E-02 | 9.59E-02 | 4.69E-02 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 2.02E-02 | +- 5.10E-02 | 8.64E-02R | 4.26E-02 | 5.85E+03 |
| Na-22 | 1274.54 | N | 3.15E-03 | +- 1.57E-02 | 2.66E-02 | 1.30E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 5.45E-03 | +- 1.57E-02 | 2.67E-02 | 1.31E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 2.65E-02 | +- 7.12E-02 | 1.22E-01 | 5.93E-02 | 1.17E+05 |
| Al-26 | 1808.65 | N | 9.37E-03 | +- 1.37E-02 | 2.39E-02 | 1.16E-02 | 6.31E+09 |

MEASURED TOTAL: 1.68E+01 +- 5.95E+00 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.40 | 94.94 | 39 | 120 | 98 | 2042 | 1.02 | Deleted |
| 2 | 53.43 | 109.00 | -105 | 237 | 196 | 1701 | 0.75 | Deleted |
| 3 | 57.94 | 118.00 | 2 | 105 | 86 | 1701 | 0.75 | Deleted |
| 4 | 63.48 | 129.07 | -12 | 282 | 232 | 3403 | 1.65 | Deleted |
| 5 | 65.89 | 133.88 | -183 | 277 | 229 | 3062 | 1.43 | Deleted |
| 6 | 74.60 | 151.28 | 238 | 113 | 90 | 1858 | 0.96 | Unknown |
| 7 | 76.75 | 155.56 | 786 | 189 | 149 | 3716 | 2.01 | Unknown |
| 9 | 139.79 | 281.46 | 129 | 187 | 153 | 1811 | 1.49 | Deleted |
| 11 | 163.28 | 328.37 | 31 | 78 | 64 | 998 | 0.90 | Deleted |
| 13 | 198.49 | 398.69 | -26 | 211 | 174 | 1778 | 1.42 | Deleted |
| 15 | 241.72 | 485.02 | 345 | 127 | 100 | 1928 | 1.81 | Unknown |
| 16 | 270.41 | 542.30 | 136 | 115 | 93 | 1653 | 1.84 | Unknown |
| 21 | 511.13 | 1023.03 | 169 | 300 | 246 | 1668 | 3.35 | Deleted |
| 22 | 558.50 | 1117.64 | -37 | 153 | 127 | 831 | 1.77 | Deleted |
| 23 | 569.93 | 1140.45 | -39 | 172 | 142 | 607 | 1.17 | Deleted |
| 29 | 767.56 | 1535.12 | 84 | 158 | 129 | 1683 | 5.29 | Deleted |

041507D01.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 30 | 803.51 | 1606.93 | -17 | 146 | 121 | 687 | 2.16 | Deleted |
| 32 | 898.19 | 1796.00 | 18 | 135 | 111 | 573 | 1.95 | Deleted |
| 34 | 969.02 | 1937.45 | 58 | 125 | 102 | 665 | 2.34 | Deleted |
| 36 | 1063.51 | 2126.15 | 90 | 82 | 66 | 663 | 2.84 | Unknown |
| 39 | 1377.04 | 2752.28 | 25 | 83 | 68 | 548 | 4.11 | Deleted |
| 41 | 1729.76 | 3456.67 | 15 | 72 | 59 | 126 | 1.89 | Deleted |
| 42 | 1764.77 | 3526.59 ⁰¹²¹⁴ | 211 | 86 | 66 | 250 | 3.14 | Unknown |

*****SEEKER G A M M A A N A L Y S I S R E S U L T S P S Version 1.8.4*****

Paragon Analytics, Div. of DataChem Lab
GammaScan

*****Geo.11 / Solid*****

Sample ID: 0405096-3 GS040601-6

Code: 041134D10A

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/04/2004 13:21:53 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time. | 1.42E+003 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 60000 Sec |
| Sample Size . | 6.93E+001 g | Real Time . | 60165 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 041134D10.SPC |

Detector #: 10 (Detector 10)
 Energy(keV) = -1.08 + 0.501*Ch + 2.98E-08*Ch^2 + 4.34E-11*Ch^3 07/04/2004
 FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.38 | 94.80 | 1312 | 169 | 126 | 3119 | 1.15 | a HiResid |
| 2 | 53.67 | 109.38 | 41 | 104 | 85 | 1782 | 0.64 | b NET< CL |
| | | | | | | | | HiResid |
| 3 | 63.26 | 128.54 | 1263 | 175 | 132 | 3207 | 1.31 | a HiResid |
| | | | | | | | | Wide Pk |
| 4 | 66.05 | 134.10 | 649 | 168 | 132 | 3207 | 1.25 | b HiResid |
| 5 | 72.33 | 146.64 | 676 | 367 | 299 | 8819 | 3.53 | c HiResid |
| 6 | 74.86 | 151.70 | 1519 | 192 | 144 | 3608 | 1.41 | d HiResid |
| 7 | 77.06 | 156.10 | 2246 | 186 | 132 | 3207 | 1.32 | e HiResid |
| 8 | 84.22 | 170.39 | 415 | 143 | 112 | 2487 | 1.23 | a HiResid |
| 9 | 87.33 | 176.60 | 732 | 174 | 136 | 3197 | 1.47 | b HiResid |
| 10 | 92.68 | 187.29 | 2415 | 192 | 136 | 3197 | 1.48 | c HiResid |
| 11 | 139.84 | 281.50 | 520 | 149 | 117 | 2522 | 1.33 | a |
| 12 | 143.77 | 289.34 | 275 | 120 | 95 | 1892 | 0.98 | b |
| 13 | 185.85 | 373.40 | 1819 | 182 | 132 | 2880 | 1.58 | a |
| 14 | 198.47 | 398.60 | 869 | 159 | 122 | 2570 | 1.53 | a |
| 15 | 209.44 | 420.51 | 47 | 97 | 79 | 1428 | 0.74 | a NET< CL |
| 16 | 238.65 | 478.86 | 2054 | 167 | 116 | 2479 | 1.64 | a |
| 17 | 241.84 | 485.23 | 1236 | 157 | 116 | 2479 | 1.70 | b |
| 18 | 270.40 | 542.28 | 293 | 165 | 133 | 2839 | 2.11 | a |
| 19 | 277.21 | 555.88 | 120 | 124 | 101 | 1966 | 1.54 | b |
| 20 | 295.16 | 591.73 | 2334 | 164 | 109 | 2179 | 1.59 | a |
| 21 | 338.39 | 678.06 | 272 | 121 | 96 | 1778 | 1.44 | a |
| 22 | 351.96 | 705.17 | 4309 | 190 | 112 | 2124 | 1.88 | a |

041134D10.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|--------------------|
| 23 | 438.68 | 878.35 | 78 | 111 | 90 | 1554 | 1.83 a | NET< CL |
| 24 | 462.88 | 926.68 | 94 | 116 | 94 | 1649 | 2.03 a | NET< CL |
| 25 | 511.11 | 1022.99 | 5109 | 219 | 136 | 2565 | 3.27 a | Wide Pk |
| 26 | 558.63 | 1117.87 | 521 | 105 | 78 | 1220 | 1.62 a | |
| 27 | 570.36 | 1141.28 | 21 | 188 | 154 | 3204 | 3.46 a | NET< CL Wide Pk |
| 28 | 571.00 | 1142.57 | -4 | 82 | 68 | 1068 | 1.10 b | NET< CL |
| 29 | 583.58 | 1167.69 | 615 | 118 | 88 | 1434 | 2.02 a | |
| 30 | 609.49 | 1219.42 | 3240 | 196 | 131 | 2815 | 2.41 a | |
| 31 | 661.66 | 1323.57 | 436 | 140 | 110 | 1836 | 2.79 a | |
| 32 | 694.90 | 1389.93 | 609 | 273 | 221 | 4152 | 6.55 a | Wide Pk |
| 33 | 727.12 | 1454.25 | 123 | 141 | 114 | 1873 | 3.11 a | |
| 34 | 768.51 | 1536.85 | 370 | 141 | 112 | 1680 | 3.48 a | |
| 35 | 803.67 | 1607.04 | 485 | 123 | 94 | 1354 | 2.72 a | |
| 36 | 837.53 | 1674.60 | 256 | 191 | 155 | 2527 | 4.83 a | Wide Pk |
| 37 | 861.18 | 1721.81 | 113 | 93 | 74 | 1022 | 1.93 a | |
| 38 | 899.31 | 1797.90 | 235 | 140 | 113 | 1564 | 3.93 a | |
| 39 | 911.46 | 1822.16 | 754 | 130 | 97 | 1303 | 3.25 b | |
| 40 | 934.15 | 1867.41 | 103 | 105 | 85 | 1106 | 2.85 a | |
| 41 | 963.79 | 1926.55 | 238 | 145 | 117 | 1593 | 4.24 a | |
| 42 | 969.18 | 1937.32 | 359 | 98 | 75 | 919 | 2.46 b | |
| 43 | 1002.15 | 2003.09 | 100 | 92 | 74 | 901 | 2.41 a | |
| 44 | 1048.95 | 2096.45 | 115 | 109 | 88 | 1134 | 2.97 a | |
| 45 | 1120.61 | 2239.38 | 714 | 131 | 98 | 1261 | 3.63 a | |
| 46 | 1238.32 | 2474.11 | 192 | 96 | 75 | 897 | 2.58 a | |
| 47 | 1378.01 | 2752.58 | 191 | 92 | 72 | 702 | 3.45 a | |
| 48 | 1461.03 | 2918.01 | 5187 | 177 | 85 | 798 | 4.59 a | HiResid |
| 49 | 1730.16 | 3454.00 | 147 | 85 | 67 | 544 | 4.09 a | |
| 50 | 1765.59 | 3524.51 | 702 | 104 | 74 | 573 | 4.93 a | |

041134D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Background File:.. DET100702.BKG (0419002-10 Weekly Bkg.)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.38 | 1312 | 169 | 126 | 282 | 375 | 307 | NET<CL |
| 2 | 53.67 | 41 | 104 | 85 | -195 | 290 | 240 | NET<CL |
| 3 | 63.26 | 1263 | 175 | 132 | 344 | 392 | 321 | |
| 4 | 66.05 | 649 | 168 | 132 | -60 | 337 | 278 | NET<CL |
| 6 | 74.86 | 1519 | 192 | 144 | 591 | 400 | 327 | |
| 7 | 77.06 | 2246 | 186 | 132 | 881 | 384 | 312 | |
| 9 | 87.33 | 732 | 174 | 136 | 293 | 338 | 277 | |
| 10 | 92.68 | 2415 | 192 | 136 | 567 | 419 | 342 | |
| 11 | 139.84 | 520 | 149 | 117 | -31 | 296 | 244 | NET<CL |
| 12 | 143.77 | 275 | 120 | 95 | 71 | 272 | 223 | NET<CL |
| 13 | 185.85 | 1819 | 182 | 132 | 440 | 364 | 298 | |
| 14 | 198.47 | 869 | 159 | 122 | 106 | 302 | 248 | NET<CL |
| 16 | 238.65 | 2054 | 167 | 116 | 1041 | 324 | 261 | |
| 17 | 241.84 | 1236 | 157 | 116 | 361 | 315 | 257 | |
| 20 | 295.16 | 2334 | 164 | 109 | 482 | 331 | 270 | |
| 21 | 338.39 | 272 | 121 | 96 | 55 | 254 | 208 | NET<CL |
| 22 | 351.96 | 4309 | 190 | 112 | 880 | 396 | 322 | |
| 25 | 511.11 | 5109 | 219 | 136 | 290 | 466 | 383 | NET<CL |
| 26 | 558.63 | 521 | 105 | 78 | -25 | 236 | 195 | NET<CL |
| 27 | 570.36 | 21 | 188 | 154 | -177 | 342 | 282 | NET<CL |
| 29 | 583.58 | 615 | 118 | 88 | 191 | 280 | 229 | NET<CL |
| 30 | 609.49 | 3240 | 196 | 131 | -36 | 410 | 337 | NET<CL |
| 32 | 694.90 | 609 | 273 | 221 | 198 | 425 | 348 | NET<CL |
| 34 | 768.51 | 370 | 141 | 112 | 93 | 273 | 224 | NET<CL |
| 35 | 803.67 | 485 | 123 | 94 | 35 | 293 | 241 | NET<CL |
| 36 | 837.53 | 256 | 191 | 155 | -12 | 369 | 304 | NET<CL |
| 38 | 899.31 | 235 | 140 | 113 | -76 | 291 | 240 | NET<CL |
| 39 | 911.46 | 754 | 130 | 97 | 462 | 240 | 194 | |
| 40 | 934.15 | 103 | 105 | 85 | 12 | 191 | 157 | NET<CL |
| 41 | 963.79 | 238 | 145 | 117 | -56 | 298 | 245 | NET<CL |
| 42 | 969.18 | 359 | 99 | 75 | 190 | 190 | 154 | |
| 45 | 1120.61 | 714 | 131 | 98 | 182 | 241 | 197 | NET<CL |
| 46 | 1238.32 | 192 | 96 | 75 | 51 | 194 | 159 | NET<CL |
| 47 | 1378.01 | 191 | 92 | 72 | 18 | 223 | 183 | NET<CL |
| 48 | 1461.03 | 5187 | 177 | 85 | 4034 | 282 | 207 | |
| 49 | 1730.16 | 147 | 85 | 67 | 57 | 205 | 168 | NET<CL |
| 50 | 1765.59 | 702 | 104 | 74 | 82 | 232 | 190 | NET<CL |

041134D10.SPC Analyzed by

SEEKER

F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-3 GS040601-6

Code: 041134D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/04/2004 13:21:53 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.42e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 6.93e+001 g | Real Time | 60165 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041134D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004

Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY (keV) | E (pCi/g) | Concentration |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|---------------|-----------|-----------|----------------|----------------|
| Th-234 | Average:x | 6.33E-01 | +- 3.93E-01 | | | | | 3.92E+13 |
| | 63.29 | 7.03E-01 | +- 8.02E-01 | 1.32E+00 | 6.56E-01 | 3.92E+13 | | |
| | 92.50 | 6.10E-01 | +- 4.51E-01 | 7.40E-01 | 3.68E-01 | 3.92E+13 | | |
| U-235 | 143.76 | N | 3.36E-02 | +- 1.28E-01 | 2.11E-01 | 1.05E-01 | 6.17E+12 | |
| | 185.72 | I.D. | | | | | 6.17E+12 | |
| Pb-212 | 238.63 | 1.59E-01 | +- 4.94E-02 | 8.00E-02 | 3.98E-02 | 1.67E+04 | | |
| Tl-208 | Average:x | 4.87E-02 | +- 3.89E-02 | | | | 1.27E+14 | |
| | 277.36 | 1.34E-01 | +- 1.38E-01 | 2.27E-01 | 1.12E-01 | 1.27E+14 | | |
| | 583.14 | N | 2.91E-02 | +- 4.25E-02 | 7.01E-02 | 3.48E-02 | 1.27E+14 | |
| | 860.47 | 1.61E-01 | +- 1.32E-01 | 2.15E-01 | 1.06E-01 | 1.27E+14 | | |
| Pb-214 | Average:x | 1.97E-01 | +- 7.41E-02 | | | | 1.40E+07 | |
| | 295.22 | 1.86E-01 | +- 1.28E-01 | 2.09E-01 | 1.04E-01 | 1.40E+07 | | |
| | 351.99 | 2.03E-01 | +- 9.10E-02 | 1.49E-01 | 7.40E-02 | 1.40E+07 | | |
| Bi-214 | 609.32 | N | -1.03E-02 | +- 1.18E-01 | 1.96E-01 | 9.75E-02 | 1.40E+07 | |
| Cs-137 | 661.62 | 7.33E-02 | +- 2.35E-02 | 3.73E-02 | 1.84E-02 | 2.64E+05 | | |
| Bi-212 | 727.17 | 3.04E-01 | +- 3.49E-01 | 5.74E-01 | 2.84E-01 | 1.67E+04 | | |
| Ra-228 | Average:x | 3.02E-01 | +- 1.41E-01 | | | | 5.04E+04 | |
| | 911.07 | 3.37E-01 | +- 1.75E-01 | 2.86E-01 | 1.42E-01 | 5.04E+04 | | |
| | 968.90 | 2.38E-01 | +- 2.38E-01 | 3.90E-01 | 1.94E-01 | 5.04E+04 | | |
| Pa-234m | 1001.03 | 3.38E+00 | +- 3.12E+00 | 5.10E+00 | 2.51E+00 | 3.92E+13 | | |
| Ru-106 | Average:x | 1.13E-01 | +- 2.03E-01 | | | | 8.84E+03 | |
| | 1050.47 | 1.54E+00 | +- 1.46E+00 | 2.39E+00 | 1.17E+00 | 8.84E+03 | | |
| | 621.84 | N | 8.47E-02 | +- 2.05E-01 | 3.40E-01 | 1.68E-01 | 8.84E+03 | |
| Co-56 | 1238.28 | N | 3.02E-02 | +- 1.16E-01 | 1.91E-01 | 9.49E-02 | 1.86E+03 | |

041134D10.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|----------|-------------------|-------------------|
| K-40 | 1460.75 | 9.94E+00 | +- 6.96E-01 | 1.03E+00 | 5.11E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N-7.33E-03 | +- 3.85E-02 | 6.41E-02B | 3.17E-02 | 3.80E+06 | |
| Eu-155 | 105.31 | N 2.32E-02 | +- 3.80E-02 | 6.27E-02 | 3.10E-02 | 4.35E+04 | |
| Co-57 | 122.07 | N-7.21E-05 | +- 9.95E-03 | 1.66E-02 | 8.18E-03 | 6.48E+03 | |
| Ce-144 | 133.53 | N-2.33E-02 | +- 7.71E-02 | 1.29E-01 | 6.37E-02 | 6.82E+03 | |
| Ce-139 | 165.85 | N 3.35E-03 | +- 1.29E-02 | 2.13E-02 | 1.05E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N 3.71E-01 | +- 9.33E-02 | 1.41E-01R | 6.98E-02 | 1.90E+05 | |
| Pa-231 | 302.67 | N-2.20E-01 | +- 4.25E-01 | 7.14E-01 | 3.52E-01 | 7.87E+05 | |
| Cr-51 | 320.07 | N-1.78E-01 | +- 4.42E-01 | 7.41E-01 | 3.66E-01 | 6.65E+02 | |
| I-131 | 364.48 | N 5.39E-02 | +- 2.25E+00 | 3.75E+00 | 1.85E+00 | 1.93E+02 | |
| Sb-125 | 427.95 | N 2.81E-02 | +- 4.09E-02 | 6.75E-02 | 3.33E-02 | 2.43E+04 | |
| Be-7 | 477.56 | N 3.50E-01 | +- 2.59E-01 | 4.22E-01 | 2.08E-01 | 1.28E+03 | |
| Sb-124 | 602.71 | N-4.00E-01 | +- 1.61E-01 | 2.76E-01R | 1.38E-01 | 1.44E+03 | |
| Cs-134 | 604.66 | N-1.35E-02 | +- 3.31E-02 | 5.52E-02R | 2.74E-02 | 1.81E+04 | |
| Ag-110M | 657.75 | N-3.57E-02 | +- 3.28E-02 | 5.57E-02R | 2.76E-02 | 6.00E+03 | |
| Nb-94 | 702.50 | N 1.28E-02 | +- 3.06E-02 | 5.03E-02R | 2.50E-02 | 1.78E+08 | |
| Nb-95 | 765.82 | N-4.84E-02 | +- 5.04E-02 | 8.57E-02R | 4.24E-02 | 1.54E+03 | |
| Co-58 | 810.75 | N-4.84E-03 | +- 5.03E-02 | 8.38E-02R | 4.15E-02 | 1.70E+03 | |
| Mn-54 | 834.81 | N-3.84E-02 | +- 2.49E-02 | 4.24E-02 | 2.09E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N-5.45E-02 | +- 3.45E-02 | 5.91E-02 | 2.92E-02 | 2.01E+03 | |
| Eu-154 | 1004.80 | N-2.50E-01 | +- 1.87E-01 | 3.21E-01R | 1.59E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 5.17E-02 | +- 1.08E-01 | 1.78E-01 | 8.79E-02 | 1.08E+03 | |
| Zn-65 | 1115.52 | N-7.40E-02 | +- 9.18E-02 | 1.55E-01R | 7.69E-02 | 5.85E+03 | |
| Na-22 | 1274.54 | N-5.24E-03 | +- 2.76E-02 | 4.62E-02 | 2.28E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N 2.21E-02 | +- 2.67E-02 | 4.39E-02 | 2.16E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N-1.59E-02 | +- 1.36E-01 | 2.27E-01 | 1.12E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N-1.17E-02 | +- 2.85E-02 | 4.81E-02 | 2.36E-02 | 6.31E+09 | |

MEASURED TOTAL: 1.61E+01 +- 8.19E+00 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.38 | 94.80 | 282 | 375 | 307 | 3119 | 1.15 | Deleted |
| 2 | 53.67 | 109.38 | -195 | 290 | 240 | 1782 | 0.64 | Deleted |
| 4 | 66.05 | 134.10 | -60 | 337 | 278 | 3207 | 1.25 | Deleted |
| 5 | 72.33 | 146.64 | 676 | 367 | 299 | 8819 | 3.53 | Unknown |
| 6 | 74.86 | 151.70 | 591 | 400 | 327 | 3608 | 1.41 | Unknown |
| 7 | 77.06 | 156.10 | 881 | 384 | 312 | 3207 | 1.32 | Unknown |
| 8 | 84.22 | 170.39 | 415 | 143 | 112 | 2487 | 1.23 | Unknown |
| 9 | 87.33 | 176.60 | 293 | 338 | 277 | 3197 | 1.47 | Unknown |
| 11 | 139.84 | 281.50 | -31 | 296 | 244 | 2522 | 1.33 | Deleted |
| 14 | 198.47 | 398.60 | 106 | 302 | 248 | 2570 | 1.53 | Deleted |
| 15 | 209.44 | 420.51 | 47 | 97 | 79 | 1428 | 0.74 | Deleted |
| 17 | 241.84 | 485.23 | 361 | 315 | 257 | 2479 | 1.70 | Unknown |
| 18 | 270.40 | 542.28 | 293 | 165 | 133 | 2839 | 2.11 | Unknown |

041134D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 21 | 338.39 | 678.06 | 55 | 254 | 208 | 1778 | 1.44 | Deleted |
| 23 | 438.68 | 878.35 | 78 | 111 | 90 | 1554 | 1.83 | Deleted |
| 24 | 462.88 | 926.68 | 94 | 116 | 94 | 1649 | 2.03 | Deleted |
| 25 | 511.11 | 1022.99 | 290 | 466 | 383 | 2565 | 3.27 | Deleted |
| 26 | 558.63 | 1117.87 | -25 | 236 | 195 | 1220 | 1.62 | Deleted |
| 27 | 570.36 | 1141.28 | -177 | 342 | 282 | 3204 | 3.46 | Deleted |
| 28 | 571.00 | 1142.57 | -4 | 82 | 68 | 1068 | 1.10 | Deleted |
| 32 | 694.90 | 1389.93 | 198 | 425 | 348 | 4152 | 6.55 | Deleted |
| 34 | 768.51 | 1536.85 | 93 | 273 | 224 | 1680 | 3.48 | Deleted |
| 35 | 803.67 | 1607.04 | 35 | 293 | 241 | 1354 | 2.72 | Deleted |
| 36 | 837.53 | 1674.60 | -12 | 369 | 304 | 2527 | 4.83 | Deleted |
| 38 | 899.31 | 1797.90 | -76 | 291 | 240 | 1564 | 3.93 | Deleted |
| 40 | 934.15 | 1867.41 | 12 | 191 | 157 | 1106 | 2.85 | Deleted |
| 41 | 963.79 | 1926.55 | -56 | 298 | 245 | 1593 | 4.24 | Deleted |
| 45 | 1120.61 | 2239.38 | 182 | 241 | 197 | 1261 | 3.63 | Deleted |
| 47 | 1378.01 | 2752.58 | 18 | 223 | 183 | 702 | 3.45 | Deleted |
| 49 | 1730.16 | 3454.00 | 57 | 205 | 168 | 544 | 4.09 | Deleted |
| 50 | 1765.59 | 3524.51 | 82 | 232 | 190 | 573 | 4.93 | Deleted |

000152A

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-4 GS040601-7

Code: 041080D02A

 Sampling Start: 05/06/2004 12:00:00 | Counting Start: 06/26/2004 15:44:21
 Sampling Stop: 05/06/2004 12:00:00 | Decay Time. 1.23E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 36000 Sec
 Sample Size 4.07E+002 g | Real Time 36093 Sec
 Collection Efficiency 1.0000 | Spc. File 041080D02.SPC

Detector #: 2 (Detector 2)

Energy(keV) = -0.73 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 63.23 | 127.88 | 534 | 143 | 111 | 2503 | 0.76 | a |
| 2 | 66.37 | 134.17 | 179 | 138 | 111 | 2503 | 0.88 | b |
| 3 | 74.74 | 150.92 | 2247 | 176 | 122 | 3018 | 0.89 | a |
| 4 | 77.02 | 155.47 | 3700 | 192 | 122 | 3018 | 0.79 | b |
| 5 | 81.11 | 163.65 | 99 | 77 | 61 | 1034 | 0.38 | a Wide Pk |
| 6 | 84.04 | 169.51 | 588 | 165 | 130 | 3101 | 0.96 | b |
| 7 | 87.15 | 175.72 | 1753 | 196 | 146 | 3618 | 1.16 | c |
| 8 | 89.80 | 181.01 | 1105 | 171 | 130 | 3101 | 0.92 | d |
| 9 | 92.66 | 186.73 | 2091 | 182 | 130 | 3101 | 0.99 | e |
| 10 | 93.78 | 188.98 | 459 | 239 | 193 | 5168 | 1.61 | f |
| 11 | 105.49 | 212.39 | 172 | 153 | 124 | 2848 | 1.01 | a |
| 12 | 129.14 | 259.69 | 383 | 120 | 93 | 1915 | 0.68 | a |
| 13 | 143.85 | 289.11 | 381 | 152 | 121 | 2684 | 0.97 | a |
| 14 | 154.05 | 309.50 | 286 | 96 | 74 | 1337 | 0.43 | a |
| 15 | 163.27 | 327.94 | 190 | 158 | 128 | 2787 | 1.15 | a Wide Pk |
| 16 | 166.75 | 334.90 | 101 | 190 | 156 | 3584 | 1.41 | b NET< CL |
| 17 | 185.89 | 373.16 | 2723 | 173 | 114 | 2382 | 1.01 | a |
| 18 | 209.19 | 419.75 | 744 | 140 | 106 | 2079 | 0.93 | a |
| 19 | 230.95 | 463.27 | 105 | 102 | 82 | 1371 | 0.75 | a HiResid Wide Pk |
| 20 | 235.96 | 473.29 | 417 | 176 | 141 | 2742 | 1.61 | b HiResid |
| 21 | 238.56 | 478.48 | 10556 | 235 | 94 | 1645 | 1.00 | c HiResid |
| 22 | 241.63 | 484.63 | 2755 | 177 | 118 | 2193 | 1.29 | d HiResid |
| 23 | 258.65 | 518.66 | 96 | 70 | 55 | 751 | 0.49 | a |

041080D02.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 24 | 270.26 | 541.87 | 927 | 155 | 117 | 2021 | 1.48 | a |
| 25 | 277.43 | 556.21 | 331 | 111 | 86 | 1369 | 0.91 | a |
| 26 | 295.17 | 591.69 | 4668 | 167 | 80 | 1168 | 1.03 | a |
| 27 | 300.01 | 601.36 | 661 | 109 | 80 | 1168 | 1.06 | b |
| 28 | 327.87 | 657.07 | 419 | 112 | 86 | 1247 | 1.22 | a |
| 29 | 338.19 | 677.71 | 1743 | 132 | 84 | 1195 | 1.07 | a |
| 30 | 351.80 | 704.92 | 7964 | 203 | 79 | 1070 | 1.14 | a |
| 31 | 377.83 | 756.97 | 52 | 102 | 83 | 1100 | 1.35 | a NET< CL |
| 32 | 389.05 | 779.40 | 69 | 54 | 42 | 434 | 0.56 | a |
| 33 | 409.43 | 820.15 | 180 | 94 | 74 | 940 | 1.15 | a |
| 34 | 462.84 | 926.96 | 509 | 93 | 67 | 833 | 1.35 | a |
| 35 | 477.72 | 956.70 | 31 | 51 | 41 | 407 | 0.59 | a NET< CL |
| 36 | 487.26 | 975.78 | 51 | 56 | 44 | 450 | 0.82 | a |
| 37 | 510.79 | 1022.84 | 1856 | 137 | 88 | 1134 | 1.99 | a Wide Pk |
| 38 | 558.29 | 1117.82 | 98 | 74 | 59 | 638 | 1.36 | a |
| 39 | 583.15 | 1167.52 | 3231 | 136 | 61 | 693 | 1.25 | a |
| 40 | 609.23 | 1219.68 | 5983 | 170 | 57 | 603 | 1.37 | a |
| 41 | 651.13 | 1303.47 | 51 | 52 | 41 | 363 | 0.91 | a |
| 42 | 661.66 | 1324.51 | 729 | 88 | 57 | 575 | 1.50 | a |
| 43 | 665.40 | 1331.99 | 165 | 69 | 53 | 511 | 1.28 | b |
| 44 | 727.24 | 1455.65 | 756 | 86 | 55 | 518 | 1.42 | a |
| 45 | 755.41 | 1511.98 | 73 | 58 | 46 | 384 | 1.38 | a |
| 46 | 768.28 | 1537.72 | 468 | 77 | 52 | 503 | 1.35 | a |
| 47 | 785.58 | 1572.31 | 245 | 74 | 55 | 498 | 1.60 | a |
| 48 | 794.86 | 1590.87 | 282 | 64 | 44 | 365 | 1.36 | a |
| 49 | 806.30 | 1613.74 | 86 | 56 | 43 | 368 | 1.13 | a |
| 50 | 835.65 | 1672.42 | 83 | 47 | 36 | 297 | 1.06 | a |
| 51 | 839.57 | 1680.26 | 106 | 71 | 56 | 545 | 1.83 | b |
| 52 | 860.44 | 1722.00 | 463 | 71 | 47 | 405 | 1.63 | a |
| 53 | 904.36 | 1809.82 | 62 | 51 | 40 | 326 | 1.26 | a |
| 54 | 911.22 | 1823.55 | 1903 | 104 | 47 | 407 | 1.63 | b |
| 55 | 934.14 | 1869.37 | 285 | 61 | 41 | 333 | 1.42 | a |
| 56 | 950.00 | 1901.08 | 29 | 43 | 34 | 253 | 1.20 | a NET< CL |
| 57 | 964.65 | 1930.38 | 344 | 64 | 42 | 351 | 1.41 | a |
| 58 | 968.90 | 1938.86 | 1151 | 91 | 49 | 429 | 1.76 | b |
| 59 | 1000.98 | 2003.02 | 157 | 57 | 42 | 332 | 1.71 | a |
| 60 | 1052.17 | 2105.38 | 49 | 46 | 36 | 267 | 1.26 | a |
| 61 | 1120.19 | 2241.39 | 1295 | 91 | 46 | 378 | 1.88 | a |
| 62 | 1155.18 | 2311.37 | 130 | 64 | 49 | 402 | 1.93 | a |
| 63 | 1200.67 | 2402.33 | 22 | 36 | 29 | 202 | 0.92 | a NET< CL |
| 64 | 1238.13 | 2477.23 | 484 | 73 | 48 | 427 | 2.00 | a |
| 65 | 1281.09 | 2563.13 | 53 | 36 | 27 | 177 | 0.96 | a |
| 66 | 1377.61 | 2756.12 | 308 | 56 | 36 | 224 | 2.06 | a |
| 67 | 1385.22 | 2771.34 | 60 | 41 | 31 | 190 | 1.72 | b |
| 68 | 1401.81 | 2804.53 | 79 | 51 | 39 | 256 | 2.41 | a |
| 69 | 1407.91 | 2816.72 | 140 | 38 | 25 | 137 | 1.33 | b |
| 70 | 1460.69 | 2922.27 | 4764 | 144 | 33 | 190 | 2.12 | a |
| 71 | 1509.38 | 3019.62 | 111 | 36 | 24 | 124 | 1.28 | a |
| 72 | 1588.14 | 3177.10 | 132 | 43 | 30 | 166 | 1.99 | a |

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 73 | 1591.92 | 3184.66 | 123 | 55 | 41 | 249 | 2.87 | b |
| 74 | 1620.87 | 3242.55 | 56 | 34 | 25 | 119 | 1.73 | a |
| 75 | 1630.73 | 3262.27 | 68 | 34 | 25 | 119 | 1.83 | b |
| 76 | 1661.29 | 3323.37 | 49 | 29 | 21 | 87 | 1.72 | a |
| 77 | 1729.36 | 3459.49 | 225 | 48 | 31 | 138 | 2.88 | a |
| 78 | 1764.33 | 3529.42 | 1000 | 70 | 24 | 102 | 2.31 | a |
| 79 | 1847.22 | 3695.16 | 119 | 37 | 25 | 101 | 2.41 | a |

041080D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 63.23 | 534 | 143 | 111 | 425 | 162 | 129 | |
| 2 | 66.37 | 179 | 138 | 111 | 99 | 162 | 133 | NET<CL |
| 3 | 74.74 | 2247 | 176 | 122 | 2163 | 196 | 142 | |
| 4 | 77.02 | 3700 | 192 | 122 | 3631 | 214 | 146 | |
| 6 | 84.04 | 588 | 165 | 130 | 558 | 171 | 135 | |
| 7 | 87.15 | 1753 | 196 | 146 | 1707 | 215 | 163 | |
| 8 | 89.80 | 1105 | 171 | 130 | 1094 | 183 | 140 | |
| 9 | 92.66 | 2091 | 182 | 130 | 1838 | 207 | 155 | |
| 12 | 129.14 | 383 | 120 | 93 | 366 | 130 | 103 | |
| 13 | 143.85 | 381 | 152 | 121 | 333 | 178 | 143 | |
| 15 | 163.27 | 190 | 158 | 128 | 180 | 166 | 135 | |
| 17 | 185.89 | 2723 | 173 | 114 | 2567 | 192 | 134 | |
| 21 | 238.56 | 10556 | 235 | 94 | 10415 | 247 | 115 | |
| 26 | 295.17 | 4668 | 167 | 80 | 4614 | 211 | 133 | |
| 29 | 338.19 | 1743 | 132 | 84 | 1705 | 156 | 108 | |
| 30 | 351.80 | 7964 | 203 | 79 | 7880 | 214 | 99 | |
| 37 | 510.79 | 1856 | 137 | 88 | 1035 | 196 | 152 | |
| 38 | 558.29 | 98 | 74 | 59 | -13 | 99 | 81 | NET<CL |
| 39 | 583.15 | 3231 | 136 | 61 | 3144 | 148 | 80 | |
| 40 | 609.23 | 5983 | 170 | 57 | 5898 | 188 | 90 | |
| 52 | 860.44 | 463 | 71 | 47 | 444 | 88 | 63 | |
| 54 | 911.22 | 1903 | 104 | 47 | 1866 | 113 | 60 | |
| 58 | 968.90 | 1151 | 91 | 49 | 1114 | 99 | 60 | |
| 70 | 1460.69 | 4764 | 144 | 33 | 4649 | 150 | 51 | |
| 78 | 1764.33 | 1000 | 70 | 24 | 983 | 73 | 31 | |

041080D02.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0405096-4 GS040601-7

Code: 041080D02A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 06/26/2004 15:44:21 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.23e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 36000 Sec |
| Sample Size | 4.07e+002 g | Real Time | 36093 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041080D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[5.36E-04*En^-4.56E+00 + 1.37E+02*En^7.41E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | | ENERGY (keV) | E (pCi/g) | Concentration | | Critical MDA | Halflife (hrs) |
|---------|-----------|-----------------|--------------|---------------|-----------|-----------------|-------------------|
| Th-234 | Average:x | 3.16E+00 | +- 3.42E-01 | | | 3.92E+13 | |
| | 63.29 | 3.49E+00 | +- 1.33E+00 | 2.14E+00 | 1.06E+00 | 3.92E+13 | |
| | 92.50 | 3.13E+00 | +- 3.54E-01 | 5.34E-01 | 2.65E-01 | 3.92E+13 | |
| Eu-155 | 105.31 | 6.29E-02 | +- 5.59E-02 | 9.16E-02 | 4.53E-02 | 4.35E+04 | |
| U-235 | Average:x | 2.11E-01 | +- 9.81E-02 | | | 6.17E+12 | |
| | 143.76 | 2.03E-01 | +- 1.09E-01 | 1.77E-01 | 8.75E-02 | 6.17E+12 | |
| | 163.35 | 2.48E-01 | +- 2.28E-01 | 3.74E-01 | 1.85E-01 | 6.17E+12 | |
| | 185.72 | I.D. | | | | 6.17E+12 | |
| Th-227 | 236.00 | 2.97E-01 | +- 1.25E-01 | 2.03E-01 | 1.00E-01 | 1.90E+05 | |
| Pb-212 | Average:x | 2.23E+00 | +- 5.24E-02 | | | 1.67E+04 | |
| | 238.63 | 2.23E+00 | +- 5.30E-02 | 4.98E-02 | 2.46E-02 | 1.67E+04 | |
| | 300.09 | 2.21E+00 | +- 3.66E-01 | 5.40E-01 | 2.66E-01 | 1.67E+04 | |
| Tl-208 | Average:x | 6.33E-01 | +- 2.88E-02 | | | 1.27E+14 | |
| | 277.36 | 5.15E-01 | +- 1.72E-01 | 2.72E-01 | 1.34E-01 | 1.27E+14 | |
| | 583.14 | 6.31E-01 | +- 2.98E-02 | 3.26E-02 | 1.60E-02 | 1.27E+14 | |
| | 860.47 | 8.09E-01 | +- 1.60E-01 | 2.36E-01 | 1.15E-01 | 1.27E+14 | |
| Pb-214 | Average:x | 2.47E+00 | +- 5.78E-02 | | | 1.40E+07 | |
| | 295.22 | 2.47E+00 | +- 1.13E-01 | 1.43E-01 | 7.08E-02 | 1.40E+07 | |
| | 351.99 | 2.48E+00 | +- 6.74E-02 | 6.30E-02 | 3.11E-02 | 1.40E+07 | |
| Ra-228 | Average:x | 1.74E+00 | +- 7.66E-02 | | | 5.04E+04 | |
| | 338.40 | 1.74E+00 | +- 1.59E-01 | 2.25E-01 | 1.11E-01 | 5.04E+04 | |
| | 911.07 | 1.73E+00 | +- 1.05E-01 | 1.14E-01 | 5.55E-02 | 5.04E+04 | |
| | 968.90 | 1.77E+00 | +- 1.58E-01 | 1.96E-01 | 9.60E-02 | 5.04E+04 | |
| Bi-214 | Average:x | 2.26E+00 | +- 6.58E-02 | | | 1.40E+07 | |
| | 609.32 | 2.24E+00 | +- 7.16E-02 | 6.93E-02 | 3.41E-02 | 1.40E+07 | |

041080D02.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|--------------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| | 1120.28 | | 2.36E+00 | +- 1.66E-01 | 1.74E-01 | 8.44E-02 | 1.40E+07 |
| Cs-137 | 661.62 | | 1.60E-01 | +- 1.94E-02 | 2.58E-02 | 1.26E-02 | 2.64E+05 |
| Bi-212 | 727.17 | | 2.41E+00 | +- 2.75E-01 | 3.57E-01 | 1.74E-01 | 1.67E+04 |
| Mn-54 | 834.81 | | 2.06E-02 | +- 1.17E-02 | 1.84E-02 | 8.88E-03 | 7.49E+03 |
| Pa-234m | 1001.03 | | 6.74E+00 | +- 2.46E+00 | 3.75E+00 | 1.82E+00 | 3.92E+13 |
| Ru-106 | Average:x | | 7.54E-02 | +- 1.29E-01 | . | . | 8.84E+03 |
| | 1050.47 | | 8.13E-01 | +- 7.67E-01 | 1.25E+00 | 6.02E-01 | 8.84E+03 |
| | 621.84 N | | 5.39E-02 | +- 1.31E-01 | 2.18E-01 | 1.06E-01 | 8.84E+03 |
| Ag-110M | Average:x | | 1.17E-02 | +- 2.00E-02 | . | . | 6.00E+03 |
| | 1384.27 | | 9.23E-02 | +- 6.32E-02 | 1.01E-01 | 4.82E-02 | 6.00E+03 |
| | 657.75 N | | 2.73E-03 | +- 2.10E-02 | 3.50E-02R | 1.72E-02 | 6.00E+03 |
| K-40 | 1460.75 | | 1.41E+01 | +- 4.55E-01 | 3.17E-01 | 1.54E-01 | 1.12E+13 |
| Am-241 | 59.54 N | | 1.40E-01 | +- 1.27E-01 | 2.07E-01B | 1.02E-01 | 3.80E+06 |
| Co-57 | 122.07 N | | 3.39E-03 | +- 1.14E-02 | 1.90E-02 | 9.36E-03 | 6.48E+03 |
| Ce-144 | 133.53 N | | 2.22E-02 | +- 8.84E-02 | 1.47E-01 | 7.24E-02 | 6.82E+03 |
| Ce-139 | 165.85 N | | 6.12E-03 | +- 1.38E-02 | 2.29E-02b | 1.13E-02 | 3.30E+03 |
| Pa-231 | 302.67 N-2.00E-01 | | 2.00E-01 | +- 4.35E-01 | 7.34E-01b | 3.61E-01 | 7.87E+05 |
| Cr-51 | 320.07 N-2.16E-01 | | 2.16E-01 | +- 3.67E-01 | 6.22E-01 | 3.06E-01 | 6.65E+02 |
| I-131 | 364.48 N-7.56E-01 | | 7.56E-01 | +- 1.14E+00 | 1.94E+00 | 9.51E-01 | 1.93E+02 |
| Sb-125 | 427.95 N | | 1.05E-02 | +- 4.02E-02 | 6.70E-02 | 3.29E-02 | 2.43E+04 |
| Be-7 | 477.56 N | | 9.36E-02 | +- 1.98E-01 | 3.29E-01 | 1.61E-01 | 1.28E+03 |
| Sb-124 | 602.71 N | | 8.94E-03 | +- 2.32E-02 | 3.86E-02 | 1.89E-02 | 1.44E+03 |
| Cs-134 | 604.66 N-6.73E-03 | | 6.73E-03 | +- 1.36E-02 | 2.31E-02B | 1.13E-02 | 1.81E+04 |
| Nb-94 | 702.50 N | | 2.03E-02 | +- 1.51E-02 | 2.44E-02 | 1.19E-02 | 1.78E+08 |
| Nb-95 | 765.82 N-5.30E-02 | | 5.30E-02 | +- 3.90E-02 | 6.83E-02R | 3.37E-02 | 1.54E+03 |
| Co-58 | 810.75 N-9.53E-03 | | 9.53E-03 | +- 2.02E-02 | 3.47E-02b | 1.69E-02 | 1.70E+03 |
| Sc-46 | 889.26 N-9.21E-03 | | 9.21E-03 | +- 2.06E-02 | 3.54E-02 | 1.72E-02 | 2.01E+03 |
| Eu-154 | 1004.80 N-2.56E-02 | | 2.56E-02 | +- 1.05E-01 | 1.80E-01r | 8.79E-02 | 7.45E+04 |
| Fe-59 | 1099.22 N-4.14E-02 | | 4.14E-02 | +- 5.87E-02 | 1.02E-01 | 4.95E-02 | 1.08E+03 |
| Zn-65 | 1115.52 N-3.71E-02 | | 3.71E-02 | +- 5.37E-02 | 9.29E-02R | 4.56E-02 | 5.85E+03 |
| Co-56 | 1238.28 N | | 9.58E-02 | +- 8.76E-02 | 1.41E-01r | 6.95E-02 | 1.86E+03 |
| Na-22 | 1274.54 N | | 2.51E-03 | +- 1.62E-02 | 2.74E-02B | 1.33E-02 | 2.28E+04 |
| Co-60 | 1332.51 N | | 6.69E-03 | +- 1.45E-02 | 2.42E-02 | 1.17E-02 | 4.62E+04 |
| Eu-152 | 1408.08 N | | 1.73E-01 | +- 1.10E-01 | 1.68E-01r | 8.20E-02 | 1.17E+05 |
| Al-26 | 1808.65 N-4.58E-04 | | 4.58E-04 | +- 1.23E-02 | 2.13E-02 | 1.01E-02 | 6.31E+09 |

MEASURED TOTAL: 3.72E+01 +- 5.01E+00 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 2 | 66.37 | 134.17 | 99 | 162 | 133 | 2503 | 0.88 | Deleted |
| 3 | 74.74 | 150.92 | 2163 | 196 | 142 | 3018 | 0.89 | Unknown |
| 4 | 77.02 | 155.47 | 3631 | 214 | 146 | 3018 | 0.79 | Unknown |
| 5 | 81.11 | 163.65 | 99 | 77 | 61 | 1034 | 0.38 | Unknown |
| 6 | 84.04 | 169.51 | 558 | 171 | 135 | 3101 | 0.96 | Unknown |

041080D02.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 7 | 87.15 | 175.72 | 1707 | 215 | 163 | 3618 | 1.16 | Unknown |
| 8 | 89.80 | 181.01 | 1094 | 183 | 140 | 3101 | 0.92 | Unknown |
| 10 | 93.78 | 188.98 | 459 | 239 | 193 | 5168 | 1.61 | Unknown |
| 12 | 129.14 | 259.69 | 366 | 130 | 103 | 1915 | 0.68 | Unknown |
| 14 | 154.05 | 309.50 | 286 | 96 | 74 | 1337 | 0.43 | Unknown |
| 16 | 166.75 | 334.90 | 101 | 190 | 156 | 3584 | 1.41 | Deleted |
| 18 | 209.19 | 419.75 | 744 | 140 | 106 | 2079 | 0.93 | Unknown |
| 19 | 230.95 | 463.27 | 105 | 102 | 82 | 1371 | 0.75 | Unknown |
| 22 | 241.63 | 484.63 | 2755 | 177 | 118 | 2193 | 1.29 | Unknown |
| 23 | 258.65 | 518.66 | 96 | 70 | 55 | 751 | 0.49 | Unknown |
| — | 270.26 | 541.87 | 927 | 155 | 117 | 2021 | 1.48 | Unknown |
| 28 | 327.87 | 657.07 | 419 | 112 | 86 | 1247 | 1.22 | Unknown |
| 31 | 377.83 | 756.97 | 52 | 102 | 83 | 1100 | 1.35 | Deleted |
| 32 | 389.05 | 779.40 | 69 | 54 | 42 | 434 | 0.56 | Unknown |
| 33 | 409.43 | 820.15 | 180 | 94 | 74 | 940 | 1.15 | Unknown |
| — | 462.84 | 926.96 | 509 | 93 | 67 | 833 | 1.35 | Unknown |
| 35 | 477.72 | 956.70 | 31 | 51 | 41 | 407 | 0.59 | Deleted |
| 36 | 487.26 | 975.78 | 51 | 56 | 44 | 450 | 0.82 | 1509DEsc |
| 37 | 510.79 | 1022.84 | 1035 | 196 | 152 | 1134 | 1.99 | Unknown |
| 38 | 558.29 | 1117.82 | -13 | 99 | 81 | 638 | 1.36 | Deleted |
| 41 | 651.13 | 1303.47 | 51 | 52 | 41 | 363 | 0.91 | Unknown |
| 43 | 665.40 | 1331.99 | 165 | 69 | 53 | 511 | 1.28 | Unknown |
| 45 | 755.41 | 1511.98 | 73 | 58 | 46 | 384 | 1.38 | Unknown |
| — | 768.28 | 1537.72 | 468 | 77 | 52 | 503 | 1.35 | Unknown |
| 47 | 785.58 | 1572.31 | 245 | 74 | 55 | 498 | 1.60 | Unknown |
| 48 | 794.86 | 1590.87 | 282 | 64 | 44 | 365 | 1.36 | Unknown |
| 49 | 806.30 | 1613.74 | 86 | 56 | 43 | 368 | 1.13 | Unknown |
| 51 | 839.57 | 1680.26 | 106 | 71 | 56 | 545 | 1.83 | Unknown |
| 53 | 904.36 | 1809.82 | 62 | 51 | 40 | 326 | 1.26 | Unknown |
| — | 934.14 | 1869.37 | 285 | 61 | 41 | 333 | 1.42 | Unknown |
| 56 | 950.00 | 1901.08 | 29 | 43 | 34 | 253 | 1.20 | Deleted |
| 57 | 964.65 | 1930.38 | 344 | 64 | 42 | 351 | 1.41 | Unknown |
| 62 | 1155.18 | 2311.37 | 130 | 64 | 49 | 402 | 1.93 | Unknown |
| 63 | 1200.67 | 2402.33 | 22 | 36 | 29 | 202 | 0.92 | Deleted |
| 64 | 1238.13 | 2477.23 | 484 | 73 | 48 | 427 | 2.00 | Unknown |
| 65 | 1281.09 | 2563.13 | 53 | 36 | 27 | 177 | 0.96 | Unknown |
| 66 | 1377.61 | 2756.12 | 308 | 56 | 36 | 224 | 2.06 | Unknown |
| 68 | 1401.81 | 2804.53 | 79 | 51 | 40 | 256 | 2.41 | Unknown |
| 69 | 1407.91 | 2816.72 | 140 | 38 | 25 | 137 | 1.33 | Unknown |
| 71 | 1509.38 | 3019.62 | 111 | 36 | 24 | 124 | 1.28 | Unknown |
| 72 | 1588.14 | 3177.10 | 132 | 43 | 30 | 166 | 1.99 | Unknown |
| 73 | 1591.92 | 3184.66 | 123 | 55 | 41 | 249 | 2.87 | Unknown |
| 74 | 1620.87 | 3242.55 | 56 | 34 | 25 | 119 | 1.73 | Unknown |
| 75 | 1630.73 | 3262.27 | 68 | 34 | 25 | 119 | 1.83 | Unknown |
| 76 | 1661.29 | 3323.37 | 49 | 29 | 21 | 87 | 1.72 | Unknown |
| 77 | 1729.36 | 3459.49 | 225 | 48 | 31 | 138 | 2.88 | Unknown |
| 78 | 1764.33 | 3529.42 | 983 | 73 | 31 | 102 | 2.31 | Unknown |
| 79 | 1847.22 | 3695.16 | 119 | 37 | 25 | 101 | 2.41 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-5 GS040601-7

Code: 041059D08A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 06/26/2004 11:29:58 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.22E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.42E+002 g | Real Time | 1805 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041059D08.SPC |

Detector #: 8 (Detector 8)

Energy(keV) = -0.38 + 0.500*Ch +-3.43E-07*Ch^2 + 1.39E-10*Ch^3 06/26/2004

FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.46 | 93.60 | 177 | 43 | 28 | 158 | 0.85 | a |
| 2 | 50.00 | 100.69 | 32 | 36 | 28 | 158 | 0.83 | b |
| 3 | 63.20 | 127.07 | 172 | 46 | 31 | 213 | 0.72 | a |
| 4 | 74.80 | 150.25 | 432 | 62 | 38 | 288 | 0.85 | a |
| 5 | 77.06 | 154.77 | 664 | 69 | 38 | 288 | 0.83 | b |
| 6 | 84.23 | 169.09 | 76 | 47 | 36 | 241 | 1.02 | a |
| 7 | 87.12 | 174.86 | 229 | 58 | 41 | 281 | 1.07 | b |
| 8 | 89.88 | 180.38 | 126 | 40 | 27 | 161 | 0.62 | c |
| 9 | 92.81 | 186.24 | 338 | 66 | 45 | 321 | 1.25 | d |
| 10 | 94.74 | 190.11 | 31 | 35 | 27 | 161 | 0.59 | e |
| 11 | 114.96 | 230.52 | 25 | 40 | 32 | 192 | 1.01 | a NET< CL |
| 12 | 128.94 | 258.45 | 36 | 30 | 23 | 117 | 0.62 | a |
| 13 | 185.92 | 372.36 | 186 | 42 | 26 | 124 | 1.06 | a |
| 14 | 209.20 | 418.90 | 49 | 31 | 23 | 103 | 0.82 | a |
| 15 | 216.09 | 432.67 | 20 | 28 | 21 | 93 | 0.80 | a NET< CL |
| 16 | 238.61 | 477.69 | 807 | 63 | 22 | 91 | 0.98 | a |
| 17 | 241.75 | 483.96 | 184 | 48 | 33 | 152 | 1.57 | b |
| 18 | 270.47 | 541.38 | 84 | 33 | 22 | 84 | 1.10 | a |
| 19 | 295.16 | 590.74 | 314 | 42 | 19 | 66 | 1.02 | a |
| 20 | 300.06 | 600.53 | 44 | 29 | 21 | 77 | 1.08 | b |
| 21 | 328.16 | 656.73 | 19 | 17 | 12 | 35 | 0.57 | a |
| 22 | 338.34 | 677.06 | 138 | 31 | 17 | 54 | 0.92 | a |
| 23 | 351.96 | 704.29 | 486 | 48 | 15 | 46 | 1.12 | a |
| 24 | 462.91 | 926.13 | 45 | 21 | 13 | 37 | 1.00 | a |

041059D08.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 510.80 | 1021.87 | 121 | 29 | 16 | 41 | 1.67 | a |
| 26 | 583.31 | 1166.83 | 238 | 35 | 14 | 35 | 1.34 | a |
| 27 | 609.30 | 1218.80 | 347 | 40 | 13 | 32 | 1.21 | a |
| 28 | 661.56 | 1323.26 | 23 | 16 | 11 | 28 | 0.92 | a |
| 29 | 727.52 | 1455.09 | 59 | 20 | 10 | 23 | 1.16 | a |
| 30 | 794.78 | 1589.53 | 23 | 16 | 10 | 22 | 1.26 | a |
| 31 | 860.51 | 1720.85 | 27 | 19 | 13 | 31 | 1.61 | a |
| 32 | 911.07 | 1821.87 | 152 | 28 | 11 | 25 | 1.49 | a |
| 33 | 933.84 | 1867.36 | 22 | 12 | 7 | 10 | 1.33 | a |
| 34 | 968.99 | 1937.56 | 69 | 22 | 12 | 30 | 1.12 | a |
| 35 | 1120.54 | 2240.15 | 75 | 20 | 8 | 13 | 1.61 | a |
| 36 | 1238.21 | 2474.96 | 24 | 16 | 11 | 21 | 2.00 | a |
| 37 | 1377.60 | 2752.88 | 15 | 10 | 5 | 7 | 1.11 | a |
| 38 | 1460.98 | 2919.02 | 207 | 30 | 6 | 7 | 1.80 | a |
| 39 | 1765.48 | 3524.88 | 52 | 15 | 5 | 4 | 2.02 | a |

041059D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET080625.BKG (0418003-38 Weekly Background)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 46.46 | 177 | 43 | 28 | 158 | 43 | 29 | |
| 3 | 63.20 | 172 | 46 | 31 | 157 | 46 | 32 | |
| 4 | 74.80 | 432 | 62 | 38 | 426 | 62 | 38 | |
| 5 | 77.06 | 664 | 69 | 38 | 660 | 69 | 38 | |
| 6 | 84.23 | 76 | 47 | 36 | 72 | 48 | 37 | |
| 7 | 87.12 | 229 | 58 | 41 | 229 | 58 | 41 | |
| 9 | 92.81 | 338 | 66 | 45 | 314 | 66 | 46 | |
| 13 | 185.92 | 186 | 42 | 26 | 174 | 42 | 27 | |
| 16 | 238.61 | 807 | 63 | 22 | 799 | 63 | 23 | |
| 18 | 270.47 | 84 | 33 | 22 | 84 | 33 | 22 | |
| 19 | 295.16 | 314 | 42 | 19 | 312 | 42 | 19 | |
| 22 | 338.34 | 138 | 31 | 17 | 136 | 32 | 18 | |
| 23 | 351.96 | 486 | 48 | 15 | 483 | 48 | 16 | |
| 25 | 510.80 | 121 | 29 | 16 | 69 | 30 | 21 | |
| 26 | 583.31 | 238 | 35 | 14 | 236 | 35 | 14 | |
| 27 | 609.30 | 347 | 40 | 13 | 343 | 40 | 13 | |
| 32 | 911.07 | 152 | 28 | 11 | 150 | 28 | 12 | |
| 35 | 1120.54 | 75 | 20 | 8 | 74 | 20 | 8 | |
| 38 | 1460.98 | 207 | 30 | 6 | 199 | 30 | 8 | |
| 39 | 1765.48 | 52 | 15 | 5 | 51 | 15 | 5 | |

041059D08.SPC Analyzed by

SEEKER

F I N A L A C T I V I T Y R E P O R T

Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-5 GS040601-7

Code: 041059D08A

| | | | |
|--------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 06/26/2004 11:29:58 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time. | 1.22e+003 Hrs |
| Buildup Time. | 0.00e+000 Hrs | Live Time . | 1800 Sec |
| Sample Size . | 3.42e+002 g | Real Time . | 1805 Sec |
| Collection Efficiency . | 1.0000 | Spectrum File . | 041059D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | | N | ENERGY | E | Concentration | | Critical | Halflife |
|---------|-----------|------------|--------|----------|---------------|----------|----------|-------------|
| | | | (keV) | T | (pCi/g) |) | MDA | Level (hrs) |
| Th-234 | Average:x | 7.96E+00 | +- | 1.37E+00 | | . | . | 3.92E+13 |
| | 63.29 | 7.24E+00 | +- | 2.12E+00 | 3.05E+00 | 1.46E+00 | 3.92E+13 | |
| | 92.50 | 8.47E+00 | +- | 1.78E+00 | 2.55E+00 | 1.24E+00 | 3.92E+13 | |
| U-235 | 143.76 | N-1.62E-01 | +- | 4.73E-01 | 8.35E-01 | 3.97E-01 | 6.17E+12 | |
| | 185.72 | I.D. | . | . | . | . | 6.17E+12 | |
| Pb-212 | Average:x | 4.26E+00 | +- | 3.34E-01 | | . | . | 1.67E+04 |
| | 238.63 | 4.27E+00 | +- | 3.37E-01 | 2.60E-01 | 1.23E-01 | 1.67E+04 | |
| | 300.09 | 3.67E+00 | +- | 2.43E+00 | 3.79E+00 | 1.78E+00 | 1.67E+04 | |
| Pb-214 | Average:x | 3.94E+00 | +- | 3.16E-01 | | . | . | 1.40E+07 |
| | 295.22 | 4.18E+00 | +- | 5.67E-01 | 5.52E-01 | 2.58E-01 | 1.40E+07 | |
| | 351.99 | 3.83E+00 | +- | 3.80E-01 | 2.72E-01 | 1.25E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 3.44E+00 | +- | 4.59E-01 | | . | . | 5.04E+04 |
| | 338.40 | 3.50E+00 | +- | 8.13E-01 | 9.72E-01 | 4.51E-01 | 5.04E+04 | |
| | 911.07 | 3.69E+00 | +- | 6.96E-01 | 6.42E-01 | 2.88E-01 | 5.04E+04 | |
| | 968.90 | 2.92E+00 | +- | 9.24E-01 | 1.11E+00 | 4.96E-01 | 5.04E+04 | |
| Sb-125 | Average:x | 2.55E-01 | +- | 2.43E-01 | | . | . | 2.43E+04 |
| | 463.51 | 1.63E+00 | +- | 7.50E-01 | 1.05E+00 | 4.75E-01 | 2.43E+04 | |
| | 427.95 | N 9.45E-02 | +- | 2.57E-01 | 4.40E-01 | 2.04E-01 | 2.43E+04 | |
| Tl-208 | Average:x | 1.22E+00 | +- | 1.79E-01 | | . | . | 1.27E+14 |
| | 583.14 | 1.22E+00 | +- | 1.82E-01 | 1.61E-01 | 7.37E-02 | 1.27E+14 | |
| | 860.47 | 1.31E+00 | +- | 9.05E-01 | 1.37E+00 | 6.21E-01 | 1.27E+14 | |
| Bi-214 | Average:x | 3.40E+00 | +- | 3.67E-01 | | . | . | 1.40E+07 |
| | 609.32 | 3.37E+00 | +- | 3.97E-01 | 2.87E-01 | 1.30E-01 | 1.40E+07 | |
| | 1120.28 | 3.59E+00 | +- | 9.66E-01 | 9.34E-01 | 4.01E-01 | 1.40E+07 | |
| Cs-137 | 661.62 | 1.34E-01 | +- | 9.38E-02 | 1.41E-01 | 6.29E-02 | 2.64E+05 | |

041059D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|-----------|-------------------|-------------------|
| Bi-212 | 727.17 | 4.95E+00 | +- 1.65E+00 | 1.94E+00 | 8.59E-01 | 1.67E+04 | |
| Cs-134 | Average:x | 7.79E-02 | +- 6.97E-02 | | | 1.81E+04 | |
| | 795.76 | 1.58E-01 | +- 1.09E-01 | 1.62E-01 | 7.17E-02 | 1.81E+04 | |
| | 604.66 | N 2.23E-02 | +- 9.07E-02 | 1.58E-01B | 7.26E-02 | 1.81E+04 | |
| Co-56 | 1238.28 | 4.38E-01 | +- 3.00E-01 | 4.47E-01 | 1.99E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 1.65E+01 | +- 2.47E+00 | 1.54E+00 | 6.58E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N 1.23E-01 | +- 2.26E-01 | 3.76E-01 | 1.81E-01 | 3.80E+06 | |
| Eu-155 | 105.31 | N 2.15E-01 | +- 2.42E-01 | 3.96E-01 | 1.88E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N 1.83E-02 | +- 6.03E-02 | 1.03E-01 | 4.86E-02 | 6.48E+03 | |
| Ce-144 | 133.53 | N-1.04E-01 | +- 5.04E-01 | 8.83E-01 | 4.20E-01 | 6.82E+03 | |
| Ce-139 | 165.85 | N 1.40E-02 | +- 9.31E-02 | 1.59E-01 | 7.58E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N 7.14E-02 | +- 5.20E-01 | 8.95E-01B | 4.23E-01 | 1.90E+05 | |
| Cr-51 | 320.07 | N-4.08E-01 | +- 2.14E+00 | 3.85E+00 | 1.79E+00 | 6.65E+02 | |
| I-131 | 364.48 | N 1.39E+00 | +- 6.13E+00 | 1.07E+01 | 4.93E+00 | 1.93E+02 | |
| Be-7 | 477.56 | N 9.62E-01 | +- 1.39E+00 | 2.31E+00 | 1.06E+00 | 1.28E+03 | |
| Sb-124 | 602.71 | N 3.80E-02 | +- 1.54E-01 | 2.69E-01 | 1.24E-01 | 1.44E+03 | |
| Ru-106 | 621.84 | N-4.77E-01 | +- 8.76E-01 | 1.67E+00 | 7.65E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N 2.36E-03 | +- 9.02E-02 | 1.64E-01B | 7.39E-02 | 6.00E+03 | |
| Nb-94 | 702.50 | N-3.62E-02 | +- 9.77E-02 | 1.81E-01 | 8.34E-02 | 1.78E+08 | |
| Nb-95 | 765.82 | N-2.83E-02 | +- 1.70E-01 | 3.10E-01 | 1.42E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N 1.88E-02 | +- 1.41E-01 | 2.53E-01 | 1.14E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N-3.26E-02 | +- 1.08E-01 | 2.02E-01 | 9.22E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N-5.31E-02 | +- 1.40E-01 | 2.67E-01 | 1.21E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 1.64E+01 | +- 1.84E+01 | 2.98E+01 | 1.34E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N-4.45E-01 | +- 5.71E-01 | 1.13E+00 | 5.16E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N-1.97E-01 | +- 3.23E-01 | 6.60E-01 | 2.92E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N 3.28E-01 | +- 5.05E-01 | 8.39E-01P | 3.97E-01 | 5.85E+03 | |
| Na-22 | 1274.54 | N-5.58E-02 | +- 1.02E-01 | 2.05E-01 | 9.13E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N-2.30E-02 | +- 1.12E-01 | 2.14E-01 | 9.52E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 3.88E-01 | +- 5.15E-01 | 8.50E-01 | 3.68E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N-3.61E-02 | +- 6.54E-02 | 1.55E-01 | 6.28E-02 | 6.31E+09 | |

MEASURED TOTAL: 6.65E+01 +- 3.63E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.46 | 93.60 | 158 | 43 | 29 | 158 | 0.85 | Unknown |
| 2 | 50.00 | 100.69 | 32 | 36 | 28 | 158 | 0.83 | Unknown |
| 4 | 74.80 | 150.25 | 426 | 62 | 38 | 288 | 0.85 | Unknown |
| 5 | 77.06 | 154.77 | 660 | 69 | 38 | 288 | 0.83 | Unknown |
| 6 | 84.23 | 169.09 | 72 | 48 | 37 | 241 | 1.02 | Unknown |
| 7 | 87.12 | 174.86 | 229 | 58 | 41 | 281 | 1.07 | Unknown |
| 8 | 89.88 | 180.38 | 126 | 40 | 27 | 161 | 0.62 | Unknown |
| 10 | 94.74 | 190.11 | 31 | 35 | 27 | 161 | 0.59 | Unknown |
| 11 | 114.96 | 230.52 | 25 | 40 | 32 | 192 | 1.01 | Deleted |

041059D08.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 12 | 128.94 | 258.45 | 36 | 30 | 23 | 117 | 0.62 | Unknown |
| 14 | 209.20 | 418.90 | 49 | 31 | 23 | 103 | 0.82 | Unknown |
| 15 | 216.09 | 432.67 | 20 | 28 | 21 | 93 | 0.80 | Deleted |
| 17 | 241.75 | 483.96 | 184 | 48 | 33 | 152 | 1.57 | Unknown |
| 18 | 270.47 | 541.38 | 84 | 33 | 22 | 84 | 1.10 | Unknown |
| 21 | 328.16 | 656.73 | 19 | 17 | 12 | 35 | 0.57 | Unknown |
| 25 | 510.80 | 1021.87 | 69 | 30 | 21 | 41 | 1.67 | Unknown |
| 33 | 933.84 | 1867.36 | 22 | 12 | 7 | 10 | 1.33 | Unknown |
| 37 | 1377.60 | 2752.88 | 15 | 10 | 5 | 7 | 1.11 | Unknown |
| 39 | 1765.48 | 3524.88 | 51 | 15 | 5 | 4 | 2.02 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0405096-6 GS040720-2

Code: 041253D08A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 07/20/2004 23:29:48 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.79E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.83E+002 g | Real Time | 1821 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041253D08.SPC |

Detector #: 8 (Detector 8)

Energy(keV) = -0.26 + 0.500*Ch + 2.33E-07*Ch^2 + 1.14E-10*Ch^3 07/20/2004

FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 46.46 | 93.40 | 38 | 22 | 15 | 44 | 0.85 | a |
| 2 | 63.27 | 127.00 | 20 | 20 | 15 | 55 | 0.57 | a |
| 3 | 74.86 | 150.17 | 105 | 34 | 22 | 89 | 0.96 | a |
| 4 | 77.17 | 154.78 | 157 | 34 | 19 | 74 | 0.86 | b |
| 5 | 87.41 | 175.27 | 23 | 26 | 20 | 83 | 0.77 | a |
| 6 | 92.92 | 186.28 | 53 | 31 | 23 | 88 | 1.10 | a |
| 7 | 185.72 | 371.82 | 35 | 20 | 14 | 38 | 0.84 | a |
| 8 | 238.69 | 477.72 | 172 | 31 | 14 | 39 | 0.84 | a |
| 9 | 241.54 | 483.42 | 44 | 28 | 20 | 63 | 1.23 | b |
| 10 | 295.21 | 590.75 | 83 | 26 | 15 | 35 | 1.30 | a |
| 11 | 299.96 | 600.24 | 31 | 21 | 15 | 35 | 1.36 | b |
| 12 | 338.46 | 677.23 | 28 | 19 | 14 | 34 | 0.92 | a |
| 13 | 351.95 | 704.21 | 107 | 25 | 11 | 25 | 0.93 | a |
| 14 | 510.82 | 1021.86 | 62 | 24 | 15 | 33 | 1.99 | a |
| 15 | 583.06 | 1166.30 | 67 | 21 | 10 | 18 | 1.71 | a |
| 16 | 609.43 | 1219.03 | 75 | 21 | 10 | 19 | 1.39 | a |
| 17 | 910.79 | 1821.31 | 45 | 17 | 8 | 14 | 1.47 | a |
| 18 | 968.73 | 1937.05 | 18 | 13 | 8 | 12 | 1.41 | a |
| 19 | 1460.72 | 2918.73 | 173 | 27 | 5 | 5 | 1.98 | a |
| 20 | 1765.91 | 3526.28 | 14 | 7 | 0 | 0 | 1.35 | a |

041253D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET080716.BKG (0419002-28 Weekly Bkg.)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.46 | 38 | 22 | 15 | 23 | 22 | 17 | |
| 2 | 63.27 | 20 | 20 | 15 | -0 | 21 | 17 | NET<CL |
| 3 | 74.86 | 105 | 34 | 22 | 97 | 34 | 23 | |
| 4 | 77.17 | 157 | 34 | 19 | 151 | 35 | 20 | |
| 5 | 87.41 | 23 | 26 | 20 | 21 | 27 | 21 | |
| 6 | 92.92 | 53 | 31 | 23 | 30 | 32 | 24 | |
| 7 | 185.72 | 35 | 20 | 14 | 24 | 21 | 15 | |
| 8 | 238.69 | 172 | 31 | 14 | 163 | 32 | 15 | |
| 10 | 295.21 | 83 | 26 | 15 | 81 | 26 | 15 | |
| 12 | 338.46 | 28 | 19 | 14 | 26 | 20 | 14 | |
| 13 | 351.95 | 107 | 25 | 11 | 101 | 25 | 12 | |
| 14 | 510.82 | 62 | 24 | 15 | 14 | 25 | 20 | NET<CL |
| 15 | 583.06 | 67 | 21 | 10 | 64 | 21 | 11 | |
| 16 | 609.43 | 75 | 21 | 10 | 72 | 21 | 11 | |
| 17 | 910.79 | 45 | 17 | 8 | 43 | 17 | 9 | |
| 19 | 1460.72 | 173 | 27 | 5 | 168 | 27 | 7 | |
| 20 | 1765.91 | 14 | 7 | 0 | 13 | 8 | 2 | |

041253D08.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-6 GS040720-2

Code: 041253D08A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 07/20/2004 23:29:48
Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.79e+003 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 3.83e+002 g | Real Time 1821 Sec
Collection Efficiency 1.0000 | Spectrum File 041253D08.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08) (Sh13).EFF (Geo 13 Eff Cal)
Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E (T) | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|----------|-----------------------|-------------|----------------|----------------|
| Th-234 | | 92.50 | 7.30E-01 | +- 7.61E-01 | 1.24E+00 | 5.87E-01 | 3.92E+13 |
| U-235 | | 143.76 | N | 4.49E-02 | +- 2.56E-01 | 4.50E-01 | 2.07E-01 |
| | | 185.72 | | I.D. | | | 6.17E+12 |
| Pb-212 | Average:x | 8.13E-01 | +- | 1.54E-01 | . | . | 1.67E+04 |
| | | 238.63 | 7.99E-01 | +- 1.55E-01 | 1.62E-01 | 7.46E-02 | 1.67E+04 |
| | | 300.09 | 2.36E+00 | +- 1.62E+00 | 2.48E+00 | 1.13E+00 | 1.67E+04 |
| Pb-214 | Average:x | 7.78E-01 | +- | 1.53E-01 | . | . | 1.40E+07 |
| | | 295.22 | 9.68E-01 | +- 3.11E-01 | 4.03E-01 | 1.85E-01 | 1.40E+07 |
| | | 351.99 | 7.18E-01 | +- 1.76E-01 | 1.88E-01 | 8.46E-02 | 1.40E+07 |
| Ra-228 | Average:x | 7.71E-01 | +- | 2.48E-01 | . | . | 5.04E+04 |
| | | 338.40 | 5.97E-01 | +- 4.58E-01 | 7.14E-01 | 3.26E-01 | 5.04E+04 |
| | | 911.07 | 9.44E-01 | +- 3.76E-01 | 4.57E-01 | 1.98E-01 | 5.04E+04 |
| | | 968.90 | 6.81E-01 | +- 4.78E-01 | 6.93E-01 | 2.95E-01 | 5.04E+04 |
| Tl-208 | | 583.14 | 2.98E-01 | +- 9.61E-02 | 1.13E-01 | 5.04E-02 | 1.27E+14 |
| Bi-214 | | 609.32 | 6.31E-01 | +- 1.88E-01 | 2.14E-01 | 9.50E-02 | 1.40E+07 |
| K-40 | | 1460.75 | 1.24E+01 | +- 2.01E+00 | 1.20E+00 | 5.01E-01 | 1.12E+13 |
| Am-241 | | 59.54 | N | 0.00E+00 | +- 1.07E-01 | 1.89E-01 | 8.80E-02 |
| Eu-155 | | 105.31 | N | 5.64E-02 | +- 1.26E-01 | 2.15E-01 | 9.87E-02 |
| Co-57 | | 122.07 | N | -9.02E-03 | +- 3.67E-02 | 6.71E-02 | 3.09E-02 |
| Ce-144 | | 133.53 | N | -6.60E-02 | +- 2.64E-01 | 4.88E-01 | 2.23E-01 |
| Ce-139 | | 165.85 | N | 2.82E-02 | +- 5.65E-02 | 9.58E-02 | 4.41E-02 |
| Th-227 | | 236.00 | N | -3.20E-02 | +- 2.93E-01 | 5.31E-01B | 2.44E-01 |
| Cr-51 | | 320.07 | N | -8.93E-01 | +- 2.54E+00 | 4.79E+00 | 2.18E+00 |
| I-131 | | 364.48 | N | 9.39E+00 | +- 2.93E+01 | 5.16E+01 | 2.30E+01 |
| Sb-125 | | 427.95 | N | 0.00E+00 | +- 1.55E-01 | 2.84E-01 | 1.27E-01 |

041253D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | | Critical MDA | Halflife (hrs) | |
|---------|-----------------|--------|--------------------------|-------------|-----------------|-------------------|----------|
| Be-7 | 477.56 | N | 3.33E-01 | +- 1.03E+00 | 1.82E+00 | 7.99E-01 | 1.28E+03 |
| Sb-124 | 602.71 | N | 1.20E-02 | +- 1.50E-01 | 2.76E-01 | 1.25E-01 | 1.44E+03 |
| Cs-134 | 604.66 | N | 1.32E-02 | +- 6.86E-02 | 1.22E-01B | 5.50E-02 | 1.81E+04 |
| Ru-106 | 621.84 | N | 1.27E-01 | +- 6.65E-01 | 1.25E+00 | 5.62E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 2.81E-02 | +- 7.04E-02 | 1.23E-01 | 5.41E-02 | 6.00E+03 |
| Cs-137 | 661.62 | N | 1.12E-02 | +- 6.44E-02 | 1.17E-01 | 5.14E-02 | 2.64E+05 |
| Nb-94 | 702.50 | N | 4.63E-03 | +- 7.35E-02 | 1.34E-01 | 6.09E-02 | 1.78E+08 |
| Bi-212 | 727.17 | N | 1.45E+00 | +- 1.05E+00 | 1.53E+00 | 6.63E-01 | 1.67E+04 |
| Nb-95 | 765.82 | N | 1.30E-01 | +- 1.41E-01 | 2.25E-01 | 9.80E-02 | 1.54E+03 |
| Co-58 | 810.75 | N | 0.00E+00 | +- 1.16E-01 | 2.20E-01 | 9.54E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 1.23E-02 | +- 6.01E-02 | 1.20E-01 | 5.15E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.32E-02 | +- 1.09E-01 | 2.10E-01 | 9.13E-02 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 9.00E+00 | +- 1.05E+01 | 1.68E+01 | 7.03E+00 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 2.18E-01 | +- 3.54E-01 | 7.39E-01 | 3.24E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 3.24E-01 | +- 3.74E-01 | 6.00E-01 | 2.51E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 2.56E-01 | +- 2.31E-01 | 4.78E-01 | 2.17E-01 | 5.85E+03 |
| Co-56 | 1238.28 | N | 2.50E-01 | +- 2.42E-01 | 3.77E-01 | 1.61E-01 | 1.86E+03 |
| Na-22 | 1274.54 | N | 1.35E-02 | +- 6.64E-02 | 1.35E-01 | 5.71E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 2.85E-02 | +- 5.53E-02 | 9.78E-02 | 3.84E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 8.87E-02 | +- 3.22E-01 | 6.65E-01 | 2.81E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 9.68E-03 | +- 5.59E-02 | 1.24E-01 | 4.87E-02 | 6.31E+09 |

MEASURED TOTAL: 3.75E+01 +- 4.70E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------------------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.46 | 93.40 | 23 | 22 | 17 | 44 | 0.85 | Unknown |
| 2 | 63.27 | 127.00 | -0 | 21 | 17 | 55 | 0.57 | Deleted |
| 3 | 74.86 | 150.17 | 97 | 34 | 23 | 89 | 0.96 | Unknown |
| 4 | 77.17 | 154.78 | 151 ^X ^{MLY} | 35 | 20 | 74 | 0.86 | Unknown |
| 5 | 87.41 | 175.27 | 21 | 27 | 21 | 83 | 0.77 | Unknown |
| 9 | 241.54 | 483.42 | 44 | 28 | 20 | 63 | 1.23 | Unknown |
| 14 | 510.82 | 1021.86 | 14 | 25 | 20 | 33 | 1.99 | Deleted |
| 20 | 1765.91 | 3526.28 | 13 ^b ²¹⁴ | 8 | 2 | 0 | 1.35 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0405096-6D GS040720-2

Code: 041254D08A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 07/21/2004 00:26:54 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.79E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.89E+002 g | Real Time | 1810 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041254D08.SPC |

Detector #: 8 (Detector 8)

Energy(keV) = -0.26 + 0.500*Ch + 2.33E-07*Ch^2 + 1.14E-10*Ch^3 07/20/2004

FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 46.40 | 93.28 | 31 | 24 | 17 | 61 | 0.85 | a |
| 2 | 52.95 | 106.36 | 12 | 14 | 11 | 31 | 0.36 | a |
| 3 | 63.42 | 127.31 | 38 | 29 | 22 | 89 | 0.98 | a |
| 4 | 74.89 | 150.23 | 103 | 33 | 22 | 89 | 0.93 | a |
| 5 | 77.08 | 154.62 | 143 | 36 | 22 | 89 | 0.94 | b |
| 6 | 87.24 | 174.92 | 48 | 26 | 18 | 67 | 0.79 | a |
| 7 | 89.95 | 180.35 | 27 | 19 | 13 | 40 | 0.41 | b |
| 8 | 93.22 | 186.89 | 67 | 36 | 26 | 107 | 1.34 | c |
| 9 | 185.97 | 372.32 | 39 | 22 | 15 | 43 | 0.74 | a |
| 10 | 238.66 | 477.66 | 145 | 30 | 14 | 45 | 0.69 | a |
| 11 | 295.24 | 590.80 | 75 | 21 | 10 | 20 | 0.92 | a |
| 12 | 338.33 | 676.97 | 44 | 21 | 13 | 28 | 1.24 | a |
| 13 | 351.89 | 704.08 | 95 | 24 | 12 | 30 | 0.96 | a |
| 14 | 510.80 | 1021.84 | 56 | 24 | 16 | 36 | 2.20 | a |
| 15 | 583.11 | 1166.39 | 48 | 17 | 8 | 14 | 0.90 | a |
| 16 | 609.02 | 1218.21 | 60 | 20 | 10 | 20 | 1.01 | a |
| 17 | 910.87 | 1821.46 | 23 | 12 | 6 | 8 | 0.97 | a |
| 18 | 1119.82 | 2238.77 | 24 | 13 | 7 | 9 | 1.68 | a |
| 19 | 1460.67 | 2918.63 | 138 | 25 | 8 | 11 | 1.96 | a |

041254D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET080716.BKG (0419002-28 Weekly Bkg.)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.40 | 31 | 24 | 17 | 16 | 24 | 19 | NET<CL |
| 2 | 52.95 | 12 | 14 | 11 | 10 | 15 | 11 | NET<CL |
| 3 | 63.42 | 38 | 29 | 22 | 18 | 30 | 24 | NET<CL |
| 4 | 74.89 | 103 | 33 | 22 | 94 | 34 | 23 | |
| 5 | 77.08 | 143 | 36 | 22 | 137 | 36 | 23 | |
| 6 | 87.24 | 48 | 26 | 18 | 46 | 26 | 18 | |
| 8 | 93.22 | 67 | 36 | 26 | 44 | 36 | 27 | |
| 9 | 185.97 | 39 | 22 | 15 | 29 | 22 | 16 | |
| 10 | 238.66 | 145 | 30 | 14 | 136 | 30 | 15 | |
| 11 | 295.24 | 75 | 21 | 10 | 72 | 22 | 11 | |
| 12 | 338.33 | 44 | 21 | 13 | 42 | 21 | 14 | |
| 13 | 351.89 | 95 | 24 | 12 | 89 | 24 | 13 | |
| 14 | 510.80 | 56 | 24 | 16 | 9 | 26 | 21 | NET<CL |
| 15 | 583.11 | 48 | 17 | 8 | 46 | 17 | 9 | |
| 16 | 609.02 | 60 | 20 | 10 | 57 | 20 | 10 | |
| 17 | 910.87 | 23 | 12 | 6 | 21 | 12 | 7 | |
| 19 | 1460.67 | 138 | 25 | 8 | 133 | 25 | 9 | |

041254D08.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0405096-6D GS040720-2

Code: 041254D08A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 07/21/2004 00:26:54 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.79e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.89e+002 g | Real Time | 1810 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041254D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | N | ENERGY (keV) | E (T) | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|------------|-----------------------|-----------|----------------|----------------|
| Th-234 | | 92.50 | | 1.06E+00 +- 8.53E-01 | 1.37E+00 | 6.52E-01 | 3.92E+13 |
| U-235 | | 143.76 | N | 1.60E-02 +- 2.60E-01 | 4.60E-01 | 2.12E-01 | 6.17E+12 |
| | | 185.72 | | I.D. | | | 6.17E+12 |
| Pb-212 | | 238.63 | | 6.59E-01 +- 1.45E-01 | 1.62E-01 | 7.47E-02 | 1.67E+04 |
| Pb-214 | Average:x | 6.91E-01 | +- | 1.42E-01 | | | 1.40E+07 |
| | | 295.22 | | 8.51E-01 +- 2.57E-01 | 2.99E-01 | 1.34E-01 | 1.40E+07 |
| | | 351.99 | | 6.21E-01 +- 1.71E-01 | 2.00E-01 | 9.04E-02 | 1.40E+07 |
| Ra-228 | Average:x | 5.80E-01 | +- | 2.35E-01 | | | 5.04E+04 |
| | | 338.40 | | 9.54E-01 +- 4.82E-01 | 6.92E-01 | 3.15E-01 | 5.04E+04 |
| | | 911.07 | | 4.64E-01 +- 2.69E-01 | 3.59E-01 | 1.50E-01 | 5.04E+04 |
| Tl-208 | | 583.14 | | 2.08E-01 +- 7.80E-02 | 9.19E-02 | 3.98E-02 | 1.27E+14 |
| Bi-214 | Average:x | 5.38E-01 | +- | 1.63E-01 | | | 1.40E+07 |
| | | 609.32 | | 4.91E-01 +- 1.71E-01 | 2.05E-01 | 9.08E-02 | 1.40E+07 |
| | | 1120.28 | | 1.02E+00 +- 5.48E-01 | 6.95E-01 | 2.89E-01 | 1.40E+07 |
| K-40 | | 1460.75 | | 9.66E+00 +- 1.85E+00 | 1.49E+00 | 6.44E-01 | 1.12E+13 |
| Am-241 | | 59.54 | N-2.71E-02 | +- 1.07E-01 | 1.93E-01B | 9.03E-02 | 3.80E+06 |
| Eu-155 | | 105.31 | N | 5.66E-02 +- 1.31E-01 | 2.23E-01 | 1.03E-01 | 4.35E+04 |
| Co-57 | | 122.07 | N-2.22E-02 | +- 3.47E-02 | 6.61E-02 | 3.05E-02 | 6.48E+03 |
| Ce-144 | | 133.53 | N-7.00E-02 | +- 2.85E-01 | 5.21E-01 | 2.40E-01 | 6.82E+03 |
| Ce-139 | | 165.85 | N | 2.51E-02 +- 5.60E-02 | 9.54E-02 | 4.39E-02 | 3.30E+03 |
| Th-227 | | 236.00 | N | 4.73E-02 +- 2.97E-01 | 5.24E-01B | 2.40E-01 | 1.90E+05 |
| Cr-51 | | 320.07 | N | 1.76E+00 +- 2.55E+00 | 4.24E+00 | 1.91E+00 | 6.65E+02 |
| I-131 | | 364.48 | N-1.05E+01 | +- 2.66E+01 | 5.18E+01 | 2.32E+01 | 1.93E+02 |
| Sb-125 | | 427.95 | N | 1.06E-02 +- 1.25E-01 | 2.32E-01 | 1.02E-01 | 2.43E+04 |
| Be-7 | | 477.56 | N-6.57E-01 | +- 9.00E-01 | 1.89E+00 | 8.33E-01 | 1.28E+03 |

041254D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | (hrs) |
|---------|---------|--------------|----------|-----------------------|-----------|--------------|----------------|-------|
| Sb-124 | 602.71 | N | 4.86E-02 | +- 1.47E-01 | 2.57E-01 | 1.16E-01 | 1.44E+03 | |
| Cs-134 | 604.66 | N | 1.47E-02 | +- 6.80E-02 | 1.27E-01B | 5.75E-02 | 1.81E+04 | |
| Ru-106 | 621.84 | N | 2.97E-01 | +- 5.99E-01 | 1.03E+00 | 4.52E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N | 1.72E-02 | +- 5.19E-02 | 9.41E-02 | 3.95E-02 | 6.00E+03 | |
| Cs-137 | 661.62 | N | 3.02E-02 | +- 5.34E-02 | 1.10E-01 | 4.83E-02 | 2.64E+05 | |
| Nb-94 | 702.50 | N | 1.82E-02 | +- 6.32E-02 | 1.12E-01 | 4.98E-02 | 1.78E+08 | |
| Bi-212 | 727.17 | N | 1.13E+00 | +- 9.14E-01 | 1.36E+00 | 5.80E-01 | 1.67E+04 | |
| Nb-95 | 765.82 | N | 5.36E-02 | +- 1.23E-01 | 2.16E-01 | 9.33E-02 | 1.54E+03 | |
| Co-58 | 810.75 | N | 3.13E-02 | +- 8.61E-02 | 1.82E-01 | 7.68E-02 | 1.70E+03 | |
| Mn-54 | 834.81 | N | 1.81E-02 | +- 7.93E-02 | 1.51E-01 | 6.75E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N | 2.00E-03 | +- 1.29E-01 | 2.39E-01 | 1.06E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N | 1.09E+00 | +- 8.58E+00 | 1.72E+01 | 7.26E+00 | 3.92E+13 | |
| Eu-154 | 1004.80 | N | 8.95E-02 | +- 2.74E-01 | 5.05E-01 | 2.07E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N | 1.42E-01 | +- 3.62E-01 | 7.36E-01 | 3.20E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N | 2.30E-01 | +- 3.08E-01 | 5.09E-01P | 2.33E-01 | 5.85E+03 | |
| Co-56 | 1238.28 | N | 5.07E-02 | +- 2.66E-01 | 4.80E-01 | 2.13E-01 | 1.86E+03 | |
| Na-22 | 1274.54 | N | 1.46E-02 | +- 7.27E-02 | 1.45E-01 | 6.23E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N | 5.17E-02 | +- 5.64E-02 | 1.34E-01 | 5.67E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N | 8.12E-02 | +- 2.88E-01 | 5.40E-01 | 2.19E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N | 6.04E-02 | +- 7.50E-02 | 1.72E-01 | 7.33E-02 | 6.31E+09 | |

MEASURED TOTAL: 1.73E+01 +- 1.00E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN-CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|----------------|--------------|-------------|------------|------------|---------|
| 1 | 46.40 | 93.28 | 16 | 24 | 19 | 61 | 0.85 | Deleted |
| 2 | 52.95 | 106.36 | 10 | 15 | 11 | 31 | 0.36 | Deleted |
| 3 | 63.42 | 127.31 | 18 | 30 | 24 | 89 | 0.98 | Deleted |
| 4 | 74.89 | 150.23 | 94 | 34 | 23 | 89 | 0.93 | Unknown |
| 5 | 77.08 | 154.62 | 137 <i>137</i> | 36 | 23 | 89 | 0.94 | Unknown |
| 6 | 87.24 | 174.92 | 46 | 26 | 18 | 67 | 0.79 | Unknown |
| 7 | 89.95 | 180.35 | 27 | 19 | 13 | 40 | 0.41 | Unknown |
| 14 | 510.80 | 1021.84 | 9 | 26 | 21 | 36 | 2.20 | Deleted |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-7 GS040601-6

Code: 041141D04B

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/27/2004 17:33:40 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.23E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.73E+001 g | Real Time | 1809 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041141D04.SPC |

Detector #: 4 (Detector 4)

Energy(keV) = -1.02 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 63.42 | 128.66 | 83 | 43 | 32 | 224 | 0.69 | a |
| 2 | 74.82 | 151.42 | 547 | 65 | 37 | 283 | 0.75 | a |
| 3 | 77.15 | 156.06 | 902 | 75 | 37 | 283 | 0.82 | b |
| 4 | 81.12 | 164.00 | 15 | 26 | 20 | 113 | 0.37 | c NET< CL |
| 5 | 84.15 | 170.04 | 135 | 51 | 37 | 283 | 0.86 | d |
| 6 | 87.25 | 176.23 | 397 | 66 | 43 | 339 | 0.92 | e |
| 7 | 89.91 | 181.55 | 204 | 59 | 43 | 339 | 1.04 | f |
| 8 | 93.10 | 187.92 | 501 | 74 | 48 | 396 | 1.22 | g |
| 9 | 94.95 | 191.59 | 29 | 40 | 32 | 226 | 0.67 | h NET< CL |
| 10 | 99.82 | 201.34 | 31 | 24 | 18 | 88 | 0.41 | a |
| 11 | 105.72 | 213.12 | 49 | 48 | 38 | 268 | 0.95 | a |
| 12 | 129.18 | 259.95 | 90 | 43 | 31 | 198 | 0.86 | a |
| 13 | 144.01 | 289.55 | 44 | 34 | 26 | 145 | 0.59 | a |
| 14 | 154.12 | 309.73 | 78 | 49 | 38 | 243 | 1.10 | a |
| 15 | 186.00 | 373.39 | 373 | 55 | 32 | 189 | 1.01 | a |
| 16 | 209.17 | 419.65 | 137 | 42 | 29 | 171 | 0.74 | a |
| 17 | 218.67 | 438.60 | 28 | 24 | 18 | 78 | 0.48 | a |
| 18 | 238.64 | 478.47 | 1865 | 94 | 30 | 166 | 0.97 | a |
| 19 | 241.75 | 484.68 | 414 | 64 | 41 | 249 | 1.49 | b |
| 20 | 270.14 | 541.38 | 160 | 51 | 36 | 195 | 1.45 | a |
| 21 | 277.67 | 556.41 | 57 | 40 | 30 | 158 | 1.19 | a |
| 22 | 295.21 | 591.42 | 768 | 63 | 24 | 107 | 1.05 | a |
| 23 | 299.99 | 600.97 | 91 | 35 | 24 | 107 | 1.02 | b |
| 24 | 327.86 | 656.60 | 88 | 36 | 26 | 112 | 1.07 | a |

041141D04.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 338.33 | 677.50 | 358 | 48 | 24 | 110 | 1.04 | a |
| 26 | 351.84 | 704.48 | 1255 | 76 | 23 | 88 | 1.17 | a |
| 27 | 409.60 | 819.81 | 39 | 26 | 19 | 70 | 0.83 | a |
| 28 | 462.80 | 926.02 | 91 | 34 | 23 | 89 | 1.56 | a |
| 29 | 510.87 | 1021.99 | 191 | 39 | 23 | 84 | 1.73 | a |
| 30 | 583.11 | 1166.21 | 586 | 54 | 19 | 70 | 1.38 | a |
| 31 | 609.17 | 1218.25 | 821 | 63 | 21 | 80 | 1.44 | a |
| 32 | 665.44 | 1330.59 | 29 | 22 | 15 | 44 | 1.35 | a |
| 33 | 727.14 | 1453.77 | 126 | 29 | 16 | 45 | 1.69 | a |
| 34 | 768.24 | 1535.82 | 79 | 31 | 21 | 75 | 1.74 | a |
| 35 | 794.97 | 1589.19 | 61 | 24 | 15 | 41 | 1.66 | a |
| 36 | 860.41 | 1719.85 | 50 | 22 | 14 | 39 | 1.36 | a |
| 37 | 911.08 | 1821.01 | 321 | 41 | 16 | 49 | 1.66 | a |
| 38 | 934.09 | 1866.95 | 37 | 19 | 12 | 28 | 1.45 | a |
| 39 | 964.53 | 1927.72 | 60 | 23 | 14 | 36 | 1.77 | a |
| 40 | 968.87 | 1936.39 | 193 | 32 | 13 | 33 | 1.66 | b |
| 41 | 1120.20 | 2238.52 | 157 | 28 | 11 | 24 | 1.71 | a |
| 42 | 1237.89 | 2473.48 | 71 | 23 | 13 | 28 | 2.45 | a |
| 43 | 1377.27 | 2751.76 | 19 | 15 | 10 | 23 | 1.47 | a |
| 44 | 1763.99 | 3523.85 | 126 | 26 | 11 | 17 | 2.91 | a |

041141D04.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 63.42 | 83 | 43 | 32 | 78 | 43 | 32 | |
| 2 | 74.82 | 547 | 65 | 37 | 543 | 65 | 38 | |
| 3 | 77.15 | 902 | 75 | 37 | 898 | 76 | 38 | |
| 6 | 87.25 | 397 | 66 | 43 | 397 | 66 | 43 | |
| 7 | 89.91 | 204 | 59 | 43 | 204 | 59 | 43 | |
| 8 | 93.10 | 501 | 74 | 48 | 491 | 74 | 49 | |
| 15 | 186.00 | 373 | 55 | 32 | 365 | 55 | 32 | |
| 18 | 238.64 | 1865 | 94 | 30 | 1859 | 94 | 30 | |
| 25 | 338.33 | 358 | 48 | 24 | 357 | 48 | 25 | |
| 26 | 351.84 | 1255 | 76 | 23 | 1251 | 76 | 23 | |
| 29 | 510.87 | 191 | 39 | 23 | 152 | 40 | 26 | |
| 30 | 583.11 | 586 | 54 | 19 | 584 | 54 | 20 | |
| 31 | 609.17 | 821 | 63 | 21 | 818 | 63 | 22 | |
| 37 | 911.08 | 321 | 41 | 16 | 320 | 41 | 17 | |

041141D04.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-7 GS040601-6

Code: 041141D04B

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/27/2004 17:33:40 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.23e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.73e+001 g | Real Time | 1809 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041141D04.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 4 (Detector 4)

Efficiency File: (D04) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | | ENERGY (keV) | E T | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|-----------------|----------|--------------------------|----------|----------|-------------------|-------------------|
| Th-234 | Average:x | 6.29E+01 | +- | 9.34E+00 | . | . | . | 3.92E+13 |
| | | 63.29 | 3.68E+01 | +- | 2.02E+01 | 3.15E+01 | 1.51E+01 | 3.92E+13 |
| | | 92.50 | 7.01E+01 | +- | 1.05E+01 | 1.43E+01 | 6.94E+00 | 3.92E+13 |
| Eu-155 | 105.31 | 1.59E+00 | +- | 1.56E+00 | 2.54E+00 | 1.23E+00 | 4.35E+04 | |
| U-235 | 143.76 | 2.38E+00 | +- | 1.82E+00 | 2.90E+00 | 1.38E+00 | 6.17E+12 | |
| | 185.72 | I.D. | | . | . | . | 6.17E+12 | |
| Pb-212 | Average:x | 3.49E+01 | +- | 1.74E+00 | . | . | . | 1.67E+04 |
| | | 238.63 | 3.51E+01 | +- | 1.77E+00 | 1.20E+00 | 5.73E-01 | 1.67E+04 |
| | | 300.09 | 2.74E+01 | +- | 1.05E+01 | 1.53E+01 | 7.25E+00 | 1.67E+04 |
| Tl-208 | Average:x | 1.14E+01 | +- | 1.02E+00 | . | . | . | 1.27E+14 |
| | | 277.36 | 7.87E+00 | +- | 5.54E+00 | 8.82E+00 | 4.22E+00 | 1.27E+14 |
| | | 583.14 | 1.16E+01 | +- | 1.07E+00 | 8.40E-01 | 3.93E-01 | 1.27E+14 |
| | | 860.47 | 9.63E+00 | +- | 4.21E+00 | 5.82E+00 | 2.65E+00 | 1.27E+14 |
| Pb-214 | Average:x | 3.65E+01 | +- | 1.78E+00 | . | . | . | 1.40E+07 |
| | | 295.22 | 3.69E+01 | +- | 3.01E+00 | 2.45E+00 | 1.16E+00 | 1.40E+07 |
| | | 351.99 | 3.63E+01 | +- | 2.21E+00 | 1.42E+00 | 6.71E-01 | 1.40E+07 |
| Ra-228 | Average:x | 3.26E+01 | +- | 2.65E+00 | . | . | . | 5.04E+04 |
| | | 338.40 | 3.34E+01 | +- | 4.52E+00 | 4.87E+00 | 2.31E+00 | 5.04E+04 |
| | | 911.07 | 3.17E+01 | +- | 4.08E+00 | 3.62E+00 | 1.68E+00 | 5.04E+04 |
| | | 968.90 | 3.29E+01 | +- | 5.49E+00 | 5.02E+00 | 2.28E+00 | 5.04E+04 |
| Sb-125 | Average:x | 1.65E+00 | +- | 1.17E+00 | . | . | . | 2.43E+04 |
| | | 463.51 | 1.24E+01 | +- | 4.62E+00 | 6.66E+00 | 3.15E+00 | 2.43E+04 |
| | | 427.95 | N | 9.15E-01 | +- | 1.21E+00 | 2.00E+00 | 9.38E-01 |
| Bi-214 | Average:x | 3.11E+01 | +- | 2.20E+00 | . | . | . | 1.40E+07 |
| | | 609.32 | 3.10E+01 | +- | 2.39E+00 | 1.76E+00 | 8.26E-01 | 1.40E+07 |

041141D04.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | Halflife (hrs) | |
|---------|-----------------|----------|--------------------------|----------|-----------------|-------------------|-------------------|----------|
| | 1120.28 | 3.14E+01 | + - | 5.66E+00 | 4.91E+00 | 2.19E+00 | 1.40E+07 | |
| Bi-212 | 727.17 | 4.13E+01 | + - | 9.63E+00 | 1.11E+01 | 5.11E+00 | 1.67E+04 | |
| Cs-134 | Average:x | 6.72E-01 | + - | 3.81E-01 | | | 1.81E+04 | |
| | 795.76 | 1.67E+00 | + - | 6.51E-01 | 8.85E-01 | 4.05E-01 | 1.81E+04 | |
| | 604.66 | N | 1.52E-01 | + - | 4.70E-01 | 8.04E-01B | 3.77E-01 | 1.81E+04 |
| Co-56 | 1238.28 | 5.49E+00 | + - | 1.78E+00 | 2.21E+00 | 1.00E+00 | 1.86E+03 | |
| Am-241 | 59.54 | N | 3.84E-01 | + - | 2.24E+00 | 3.82E+00 | 1.83E+00 | 3.80E+06 |
| Co-57 | 122.07 | N | 6.43E-02 | + - | 2.87E-01 | 4.89E-01 | 2.33E-01 | 6.48E+03 |
| Ce-144 | 133.53 | N | 1.17E+00 | + - | 2.18E+00 | 3.85E+00 | 1.84E+00 | 6.82E+03 |
| Ce-139 | 165.85 | N | 3.12E-01 | + - | 3.55E-01 | 6.39E-01 | 3.06E-01 | 3.30E+03 |
| Th-227 | 236.00 | N | 3.77E-01 | + - | 3.33E+00 | 5.69E+00R | 2.76E+00 | 1.90E+05 |
| Cr-51 | 320.07 | N | 0.00E+00 | + - | 9.57E+00 | 1.67E+01 | 7.88E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 2.57E+01 | + - | 3.31E+01 | 6.03E+01 | 2.86E+01 | 1.93E+02 |
| Be-7 | 477.56 | N | 1.04E+00 | + - | 6.82E+00 | 1.21E+01 | 5.67E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N | 7.55E-01 | + - | 8.11E-01 | 1.51E+00 | 7.14E-01 | 1.44E+03 |
| Ru-106 | 621.84 | N | 2.05E+00 | + - | 4.02E+00 | 6.81E+00 | 3.13E+00 | 8.84E+03 |
| Ag-110M | 657.75 | N | 8.61E-02 | + - | 4.73E-01 | 8.54E-01 | 3.96E-01 | 6.00E+03 |
| Cs-137 | 661.62 | N | 8.32E-02 | + - | 4.53E-01 | 7.91E-01B | 3.66E-01 | 2.64E+05 |
| Nb-94 | 702.50 | N | 5.27E-02 | + - | 4.19E-01 | 7.53E-01 | 3.49E-01 | 1.78E+08 |
| Nb-95 | 765.82 | N | 9.34E-01 | + - | 1.34E+00 | 2.47E+00R | 1.19E+00 | 1.54E+03 |
| Co-58 | 810.75 | N | 4.12E-01 | + - | 6.83E-01 | 1.30E+00 | 5.98E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 1.56E-01 | + - | 5.64E-01 | 1.02E+00 | 4.76E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.87E-01 | + - | 7.00E-01 | 1.29E+00 | 5.92E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 3.93E+01 | + - | 7.23E+01 | 1.23E+02 | 5.52E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 1.65E+00 | + - | 2.34E+00 | 4.60E+00 | 2.09E+00 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 1.15E+00 | + - | 1.69E+00 | 3.35E+00 | 1.52E+00 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 1.03E+00 | + - | 1.59E+00 | 3.08E+00R | 1.45E+00 | 5.85E+03 |
| Na-22 | 1274.54 | N | 8.79E-03 | + - | 4.85E-01 | 8.92E-01 | 3.98E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N | 7.78E-02 | + - | 4.82E-01 | 8.71E-01 | 3.87E-01 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 3.82E+00 | + - | 3.36E+00 | 5.31E+00 | 2.41E+00 | 1.17E+05 |
| K-40 | 1460.75 | N | 1.04E+01 | + - | 6.45E+00 | 9.50E+00 | 4.28E+00 | 1.12E+13 |
| Al-26 | 1808.65 | N | 7.35E-02 | + - | 5.58E-01 | 1.06E+00 | 4.69E-01 | 6.31E+09 |

MEASURED TOTAL: 3.19E+02 + - 1.25E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 2 | 74.82 | 151.42 Pb-XRAY | 543 | 65 | 38 | 283 | 0.75 | Unknown |
| 3 | 77.15 | 156.06 | 898 | 76 | 38 | 283 | 0.82 | Unknown |
| 4 | 84.15 | 170.04 | 135 | 51 | 37 | 283 | 0.86 | Unknown |
| 5 | 87.25 | 176.23 Pb-XRAY | 397 | 66 | 43 | 339 | 0.92 | Unknown |
| 6 | 89.91 | 181.55 | 204 | 59 | 43 | 339 | 1.04 | Unknown |
| 8 | 99.82 | 201.34 | 31 | 24 | 18 | 88 | 0.41 | 1120DEsc |
| 10 | 129.18 | 259.95 | 90 | 43 | 31 | 198 | 0.86 | Unknown |
| 12 | 154.12 | 309.73 | 78 | 49 | 38 | 243 | 1.10 | Unknown |

041141D04.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 14 | 209.17 | 419.65 | 137 | 42 | 29 | 171 | 0.74 | Unknown |
| 15 | 218.67 | 438.60 | 28 | 24 | 18 | 78 | 0.48 | Unknown |
| 17 | 241.75 | 484.68 Pd-Z14 | 414 | 64 | 41 | 249 | 1.49 | Unknown |
| 18 | 270.14 | 541.38 | 160 | 51 | 36 | 195 | 1.45 | Unknown |
| 22 | 327.86 | 656.60 | 88 | 36 | 26 | 112 | 1.07 | Unknown |
| 25 | 409.60 | 819.81 | 39 | 26 | 19 | 70 | 0.83 | Unknown |
| 27 | 510.87 | 1021.99 Am-N. PK | 152 | 40 | 26 | 84 | 1.73 | Unknown |
| 30 | 665.44 | 1330.59 | 29 | 22 | 15 | 44 | 1.35 | Unknown |
| 32 | 768.24 | 1535.82 | 79 | 31 | 21 | 75 | 1.74 | Unknown |
| 36 | 934.09 | 1866.95 | 37 | 19 | 12 | 28 | 1.45 | Unknown |
| 37 | 964.53 | 1927.72 | 60 | 23 | 14 | 36 | 1.78 | Unknown |
| 41 | 1377.27 | 2751.76 | 19 | 15 | 10 | 23 | 1.47 | Unknown |
| 42 | 1763.99 | 3523.85 Bi-Z14 | 126 | 26 | 11 | 17 | 2.91 | Unknown |

000179

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-8 GS040601-6

Code: 041000D07A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 06/27/2004 17:16:44
Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.23E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.10E+002 g | Real Time 1809 Sec
Collection Efficiency 1.0000 | Spc. File 041000D07.SPC

Detector #: 7 (Detector 7)

Energy(keV) = -2.07 + 0.500*Ch + 4.21E-07*Ch^2 +-5.86E-11*Ch^3 06/27/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.42 | 96.92 | 100 | 34 | 23 | 97 | 1.06 | a |
| 2 | 63.29 | 130.62 | 59 | 33 | 24 | 123 | 0.70 | a |
| 3 | 74.71 | 153.44 | 261 | 49 | 30 | 166 | 0.90 | a |
| 4 | 77.07 | 158.17 | 423 | 52 | 26 | 138 | 0.82 | b |
| 5 | 83.97 | 171.95 | 44 | 34 | 26 | 122 | 1.00 | a |
| 6 | 87.16 | 178.32 | 115 | 38 | 26 | 122 | 0.97 | b |
| 7 | 89.87 | 183.74 | 72 | 29 | 19 | 81 | 0.67 | c |
| 8 | 92.75 | 189.50 | 196 | 48 | 32 | 163 | 1.28 | d |
| 9 | 128.80 | 261.52 | 34 | 24 | 18 | 63 | 0.83 | a |
| 10 | 185.94 | 375.68 | 87 | 30 | 19 | 66 | 0.96 | a |
| 11 | 209.17 | 422.08 | 40 | 23 | 16 | 53 | 0.88 | a |
| 12 | 238.51 | 480.68 | 423 | 46 | 16 | 50 | 1.06 | a |
| 13 | 241.66 | 486.96 | 118 | 37 | 25 | 83 | 1.68 | b |
| 14 | 270.08 | 543.73 | 35 | 31 | 24 | 75 | 1.77 | a Wide Pk |
| 15 | 295.06 | 593.61 | 152 | 31 | 15 | 41 | 0.96 | a |
| 16 | 338.21 | 679.78 | 76 | 23 | 12 | 27 | 0.95 | a |
| 17 | 351.78 | 706.87 | 280 | 38 | 14 | 35 | 1.13 | a |
| 18 | 462.91 | 928.75 | 23 | 15 | 10 | 20 | 1.07 | a |
| 19 | 511.02 | 1024.78 | 74 | 24 | 14 | 29 | 1.81 | a |
| 20 | 583.16 | 1168.76 | 121 | 25 | 9 | 16 | 1.25 | a |
| 21 | 609.24 | 1220.81 | 174 | 29 | 11 | 20 | 1.42 | a |
| 22 | 727.27 | 1456.34 | 24 | 18 | 13 | 25 | 1.86 | a |
| 23 | 911.05 | 1823.00 | 57 | 20 | 11 | 20 | 2.15 | a |
| 24 | 968.82 | 1938.23 | 32 | 16 | 10 | 19 | 1.34 | a |

041000D07.SPC Analyzed by

=====

PEAK SEARCH RESULTS

=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 1120.11 | 2240.04 | 23 | 14 | 9 | 13 | 2.07 | a |
| 26 | 1460.48 | 2919.00 | 53 | 16 | 7 | 8 | 1.81 | a |
| 27 | 1764.10 | 3524.79 | 23 | 10 | 3 | 2 | 2.21 | a |

041000D07.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 46.42 | 100 | 34 | 23 | 84 | 35 | 24 | |
| 2 | 63.29 | 59 | 33 | 24 | 47 | 33 | 25 | |
| 3 | 74.71 | 261 | 49 | 30 | 258 | 49 | 30 | |
| 4 | 77.07 | 423 | 52 | 26 | 420 | 52 | 27 | |
| 5 | 83.97 | 44 | 34 | 26 | 41 | 34 | 26 | |
| 8 | 92.75 | 196 | 48 | 32 | 180 | 48 | 33 | |
| 9 | 128.80 | 34 | 24 | 18 | 33 | 24 | 18 | |
| 10 | 185.94 | 87 | 30 | 19 | 79 | 30 | 20 | |
| 12 | 238.51 | 423 | 46 | 16 | 416 | 46 | 17 | |
| 14 | 270.08 | 35 | 31 | 24 | 34 | 31 | 24 | |
| 16 | 338.21 | 76 | 23 | 12 | 74 | 23 | 13 | |
| 17 | 351.78 | 280 | 38 | 14 | 278 | 38 | 15 | |
| 19 | 511.02 | 74 | 24 | 14 | 39 | 25 | 18 | |
| 20 | 583.16 | 121 | 25 | 9 | 120 | 25 | 10 | |
| 21 | 609.24 | 174 | 29 | 11 | 172 | 30 | 11 | |
| 23 | 911.05 | 57 | 20 | 11 | 55 | 20 | 11 | |
| 24 | 968.82 | 32 | 16 | 10 | 31 | 16 | 10 | |
| 26 | 1460.48 | 53 | 16 | 7 | 49 | 17 | 7 | |

041000D07.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-8 GS040601-6

Code: 041000D07A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/27/2004 17:16:44 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.23e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.10e+002 g | Real Time | 1809 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041000D07.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 7 (Detector 7)

Efficiency File: (D07) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------|--------------|----------|-----------------------|-----------|----------|----------------|----------------|
| Th-234 | Average:x | 4.61E+00 | +- | 1.26E+00 | | | 2.83E+00 | 1.34E+00 | 3.92E+13 |
| | 63.29 | 2.56E+00 | +- | 1.79E+00 | 2.83E+00 | 1.34E+00 | | | 3.92E+13 |
| | 92.50 | 6.59E+00 | +- | 1.76E+00 | 2.51E+00 | 1.20E+00 | | | 3.92E+13 |
| U-235 | 143.76 | N | 1.63E-01 | +- | 6.03E-01 | 1.03E+00 | 4.86E-01 | 6.17E+12 | |
| | 185.72 | | I.D. | | | | | | 6.17E+12 |
| Pb-212 | 238.63 | | 3.54E+00 | +- | 3.90E-01 | 3.17E-01 | 1.47E-01 | 1.67E+04 | |
| Pb-214 | Average:x | 3.57E+00 | +- | 4.03E-01 | | | 7.13E-01 | 3.27E-01 | 1.40E+07 |
| | 295.22 | | 3.34E+00 | +- | 6.71E-01 | | | | 1.40E+07 |
| | 351.99 | | 3.71E+00 | +- | 5.03E-01 | 4.26E-01 | 1.95E-01 | 1.95E-01 | 1.40E+07 |
| Ra-228 | Average:x | 2.84E+00 | +- | 6.17E-01 | | | 1.20E+00 | 5.43E-01 | 5.04E+04 |
| | 338.40 | | 3.20E+00 | +- | 9.90E-01 | | | | 5.04E+04 |
| | 911.07 | | 2.64E+00 | +- | 9.68E-01 | 1.22E+00 | 5.45E-01 | 5.45E-01 | 5.04E+04 |
| | 968.90 | | 2.57E+00 | +- | 1.36E+00 | 1.87E+00 | 8.26E-01 | 8.26E-01 | 5.04E+04 |
| Sb-125 | Average:x | 2.87E-01 | +- | 2.77E-01 | | | 1.44E+00 | 6.36E-01 | 2.43E+04 |
| | 463.51 | | 1.42E+00 | +- | 9.72E-01 | | | | 2.43E+04 |
| | 427.95 | N | 1.86E-01 | +- | 2.89E-01 | 4.86E-01 | 2.15E-01 | 2.15E-01 | 2.43E+04 |
| Tl-208 | 583.14 | | 1.12E+00 | +- | 2.32E-01 | 2.07E-01 | 9.06E-02 | 9.06E-02 | 1.27E+14 |
| Bi-214 | Average:x | 2.97E+00 | +- | 4.96E-01 | | | 4.53E-01 | 2.02E-01 | 1.40E+07 |
| | 609.32 | | 3.07E+00 | +- | 5.29E-01 | | | | 1.40E+07 |
| | 1120.28 | | 2.24E+00 | +- | 1.41E+00 | 2.02E+00 | 8.80E-01 | 8.80E-01 | 1.40E+07 |
| Bi-212 | 727.17 | | 3.73E+00 | +- | 2.83E+00 | 4.36E+00 | 1.97E+00 | 1.97E+00 | 1.67E+04 |
| K-40 | 1460.75 | | 8.46E+00 | +- | 2.86E+00 | 3.05E+00 | 1.29E+00 | 1.29E+00 | 1.12E+13 |
| Am-241 | 59.54 | N | -1.07E-01 | +- | 1.75E-01 | 3.17E-01 | 1.50E-01 | 1.50E-01 | 3.80E+06 |
| Eu-155 | 105.31 | N | 2.80E-01 | +- | 2.57E-01 | 4.13E-01 | 1.93E-01 | 1.93E-01 | 4.35E+04 |
| Co-57 | 122.07 | N | 4.10E-02 | +- | 7.18E-02 | 1.20E-01 | 5.62E-02 | 5.62E-02 | 6.48E+03 |

041000D07.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) | |
|---------|-----------------|--------|--------------------------|----|----------|-------------------|-------------------|----------|
| Ce-144 | 133.53 | N | 3.29E-01 | +- | 6.06E-01 | 1.02E+00 | 4.77E-01 | 6.82E+03 |
| Ce-139 | 165.85 | N | 1.70E-02 | +- | 9.83E-02 | 1.71E-01 | 7.96E-02 | 3.30E+03 |
| Th-227 | 236.00 | N | 3.40E-01 | +- | 9.20E-01 | 1.52E+00R | 7.22E-01 | 1.90E+05 |
| Cr-51 | 320.07 | N | 8.16E-02 | +- | 2.97E+00 | 5.35E+00 | 2.45E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 2.93E+00 | +- | 9.25E+00 | 1.71E+01 | 7.87E+00 | 1.93E+02 |
| Be-7 | 477.56 | N | 1.94E+00 | +- | 1.75E+00 | 2.72E+00 | 1.20E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N | 1.50E-02 | +- | 2.18E-01 | 4.03E-01 | 1.81E-01 | 1.44E+03 |
| Cs-134 | 604.66 | N | 1.67E-01 | +- | 1.28E-01 | 2.69E-01B | 1.23E-01 | 1.81E+04 |
| Ru-106 | 621.84 | N | 3.78E-01 | +- | 1.10E+00 | 2.17E+00 | 9.58E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 4.22E-02 | +- | 1.45E-01 | 2.58E-01 | 1.14E-01 | 6.00E+03 |
| Cs-137 | 661.62 | N | 6.57E-02 | +- | 1.57E-01 | 3.01E-01 | 1.36E-01 | 2.64E+05 |
| Nb-94 | 702.50 | N | 3.74E-02 | +- | 1.29E-01 | 2.29E-01 | 1.01E-01 | 1.78E+08 |
| Nb-95 | 765.82 | N | 2.19E-01 | +- | 2.52E-01 | 5.12E-01 | 2.32E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 5.22E-02 | +- | 2.07E-01 | 4.03E-01 | 1.77E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 9.24E-02 | +- | 1.40E-01 | 2.35E-01 | 1.00E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N | 3.61E-02 | +- | 1.84E-01 | 3.63E-01 | 1.57E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 2.25E+00 | +- | 2.06E+01 | 4.07E+01 | 1.73E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 7.47E-02 | +- | 6.84E-01 | 1.30E+00 | 5.49E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 0.00E+00 | +- | 5.42E-01 | 1.04E+00 | 4.46E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 4.92E-01 | +- | 7.47E-01 | 1.39E+00P | 6.50E-01 | 5.85E+03 |
| Co-56 | 1238.28 | N | 2.66E-01 | +- | 3.49E-01 | 5.71E-01 | 2.34E-01 | 1.86E+03 |
| Na-22 | 1274.54 | N | 1.73E-02 | +- | 1.34E-01 | 2.75E-01 | 1.14E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N | 1.24E-01 | +- | 1.18E-01 | 2.96E-01 | 1.24E-01 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 5.29E-01 | +- | 6.59E-01 | 1.54E+00 | 6.48E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 9.37E-02 | +- | 9.37E-02 | 6.34E-02 | | 6.31E+09 |

MEASURED TOTAL: 3.48E+01 +- 1.52E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.42 | 96.92 | 84 | 35 | 24 | 97 | 1.06 | Unknown |
| 3 | 74.71 | 153.44 | 258 | 49 | 30 | 166 | 0.90 | Unknown |
| 4 | 77.07 | 158.17 | 420 | 52 | 27 | 138 | 0.82 | Unknown |
| 5 | 83.97 | 171.95 | 41 | 34 | 26 | 122 | 1.00 | Unknown |
| 6 | 87.16 | 178.32 | 115 | 38 | 26 | 122 | 0.97 | Unknown |
| 7 | 89.87 | 183.74 | 72 | 29 | 19 | 81 | 0.67 | Unknown |
| 9 | 128.80 | 261.52 | 33 | 24 | 18 | 63 | 0.83 | Unknown |
| 11 | 209.17 | 422.08 | 40 | 23 | 16 | 53 | 0.88 | Unknown |
| 13 | 241.66 | 486.96 | 118 | 37 | 25 | 83 | 1.68 | Unknown |
| 14 | 270.08 | 543.73 | 34 | 31 | 24 | 75 | 1.77 | Unknown |
| 19 | 511.02 | 1024.78 | 39 | 25 | 18 | 29 | 1.81 | Unknown |
| 27 | 1764.10 | 3524.79 | 23 | 10 | 3 | 2 | 2.21 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-9 GS040601-6

Code: 041047D10A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/27/2004 17:17:17 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.23E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.30E+001 g | Real Time | 1809 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041047D10.SPC |

Detector #: 10 (Detector 10)

Energy(keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.42 | 95.11 | 80 | 43 | 32 | 230 | 0.90 | a |
| 2 | 53.68 | 109.61 | 32 | 54 | 43 | 349 | 1.33 | a NET< CL |
| 3 | 63.20 | 128.63 | 161 | 52 | 38 | 301 | 1.02 | a |
| 4 | 74.78 | 151.77 | 590 | 77 | 49 | 450 | 1.35 | a |
| 5 | 77.04 | 156.29 | 1062 | 89 | 49 | 450 | 1.30 | b |
| 6 | 83.89 | 169.98 | 101 | 43 | 31 | 226 | 0.89 | a HiResid |
| 7 | 87.27 | 176.74 | 347 | 61 | 40 | 316 | 1.18 | b HiResid |
| 8 | 89.89 | 181.98 | 217 | 61 | 44 | 361 | 1.32 | c HiResid |
| 9 | 92.75 | 187.68 | 538 | 83 | 56 | 496 | 1.86 | d HiResid |
| 10 | 129.22 | 260.56 | 85 | 58 | 46 | 308 | 1.98 | a |
| 11 | 144.11 | 290.32 | 37 | 44 | 35 | 225 | 1.23 | a |
| 12 | 153.93 | 309.93 | 45 | 33 | 25 | 139 | 0.89 | a |
| 13 | 185.88 | 373.78 | 401 | 65 | 42 | 279 | 1.78 | a |
| 14 | 209.38 | 420.75 | 124 | 44 | 32 | 186 | 1.26 | a |
| 15 | 238.68 | 479.28 | 1528 | 90 | 37 | 227 | 1.97 | a |
| 16 | 241.75 | 485.43 | 358 | 54 | 32 | 189 | 1.61 | b |
| 17 | 270.53 | 542.93 | 132 | 47 | 34 | 182 | 2.14 | a |
| 18 | 274.63 | 551.12 | 29 | 26 | 19 | 84 | 1.03 | b |
| 19 | 277.76 | 557.38 | 57 | 32 | 23 | 112 | 1.36 | c |
| 20 | 295.21 | 592.24 | 701 | 64 | 29 | 151 | 1.84 | a |
| 21 | 299.89 | 601.59 | 73 | 37 | 27 | 137 | 1.68 | b |
| 22 | 328.06 | 657.88 | 67 | 48 | 37 | 214 | 2.23 | a |
| 23 | 338.35 | 678.45 | 290 | 51 | 31 | 164 | 2.01 | a |
| 24 | 351.93 | 705.59 | 1262 | 82 | 34 | 187 | 2.07 | a |

041047D10.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 463.06 | 927.64 | 80 | 44 | 33 | 158 | 3.04 | a Wide Pk |
| 26 | 511.13 | 1023.70 | 271 | 50 | 31 | 141 | 3.15 | a |
| 27 | 558.54 | 1118.44 | 28 | 23 | 17 | 61 | 1.26 | a |
| 28 | 583.43 | 1168.18 | 440 | 54 | 28 | 124 | 2.63 | a |
| 29 | 609.53 | 1220.33 | 877 | 70 | 30 | 151 | 2.50 | a |
| 30 | 727.26 | 1455.58 | 81 | 41 | 30 | 134 | 2.98 | a |
| 31 | 768.26 | 1537.51 | 94 | 35 | 24 | 84 | 2.97 | a |
| 32 | 860.30 | 1721.42 | 66 | 43 | 33 | 121 | 4.57 | a Wide Pk |
| 33 | 911.36 | 1823.45 | 351 | 52 | 29 | 107 | 3.72 | a |
| 34 | 935.26 | 1871.21 | 45 | 25 | 17 | 52 | 2.18 | a |
| 35 | 967.80 | 1936.23 | 247 | 54 | 36 | 132 | 5.12 | a Wide Pk |
| 36 | 1120.65 | 2241.66 | 194 | 38 | 21 | 58 | 3.80 | a |
| 37 | 1237.81 | 2475.78 | 67 | 31 | 22 | 54 | 4.20 | a |
| 38 | 1378.51 | 2756.91 | 29 | 29 | 22 | 61 | 3.82 | a |
| 39 | 1461.24 | 2922.22 | 102 | 31 | 19 | 48 | 3.65 | a |
| 40 | 1730.11 | 3459.50 | 31 | 19 | 13 | 20 | 3.87 | a |
| 41 | 1764.03 | 3527.27 | 137 | 31 | 17 | 31 | 4.70 | a |

041047D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.42 | 80 | 43 | 32 | 49 | 43 | 34 | |
| 2 | 53.68 | 32 | 54 | 43 | 29 | 54 | 44 | NET<CL |
| 3 | 63.20 | 161 | 52 | 38 | 138 | 53 | 39 | |
| 4 | 74.78 | 590 | 77 | 49 | 560 | 78 | 51 | |
| 5 | 77.04 | 1062 | 89 | 49 | 1028 | 89 | 51 | |
| 6 | 83.89 | 101 | 43 | 32 | 93 | 44 | 33 | |
| 7 | 87.27 | 347 | 61 | 40 | 333 | 62 | 41 | |
| 9 | 92.75 | 538 | 83 | 56 | 484 | 83 | 58 | |
| 13 | 185.88 | 401 | 65 | 42 | 356 | 66 | 44 | |
| 15 | 238.68 | 1528 | 90 | 37 | 1499 | 90 | 38 | |
| 16 | 241.75 | 358 | 54 | 32 | 332 | 55 | 34 | |
| 17 | 270.53 | 132 | 47 | 34 | 129 | 48 | 35 | |
| 20 | 295.21 | 701 | 64 | 29 | 649 | 64 | 32 | |
| 22 | 328.06 | 67 | 48 | 37 | 65 | 49 | 38 | |
| 23 | 338.35 | 290 | 51 | 31 | 287 | 51 | 32 | |
| 24 | 351.93 | 1262 | 82 | 34 | 1167 | 83 | 39 | |
| 26 | 511.13 | 271 | 50 | 31 | 122 | 52 | 39 | |
| 27 | 558.54 | 28 | 23 | 17 | 11 | 24 | 19 | NET<CL |
| 28 | 583.43 | 440 | 54 | 28 | 428 | 54 | 29 | |
| 29 | 609.53 | 877 | 70 | 30 | 771 | 71 | 36 | |
| 30 | 727.26 | 81 | 41 | 30 | 78 | 41 | 31 | |
| 31 | 768.26 | 94 | 35 | 24 | 85 | 36 | 25 | |
| 33 | 911.36 | 351 | 52 | 29 | 342 | 52 | 30 | |
| 34 | 935.26 | 45 | 25 | 17 | 41 | 26 | 18 | |
| 36 | 1120.65 | 194 | 38 | 21 | 171 | 39 | 24 | |
| 37 | 1237.81 | 67 | 31 | 22 | 59 | 31 | 23 | |
| 38 | 1378.51 | 29 | 29 | 22 | 26 | 29 | 22 | |
| 39 | 1461.24 | 102 | 31 | 19 | 58 | 32 | 23 | |
| 40 | 1730.11 | 31 | 19 | 13 | 28 | 20 | 14 | |
| 41 | 1764.03 | 137 | 31 | 17 | 115 | 32 | 19 | |

041047D10.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo.11 / Solid

Sample ID: 0405096-9 GS040601-6

Code: 041047D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/27/2004 17:17:17 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.23e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.30e+001 g | Real Time | 1809 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041047D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004
 Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | Average:x | 2.97E+01 | +- 4.85E+00 | | | | 3.92E+13 | |
| | 63.29 | 1.98E+01 | +- 7.62E+00 | 1.16E+01 | 5.62E+00 | 3.92E+13 | | |
| | 92.50 | 3.64E+01 | +- 6.29E+00 | 8.99E+00 | 4.39E+00 | 3.92E+13 | | |
| U-235 | 143.76 | 1.22E+00 | +- 1.45E+00 | 2.39E+00 | 1.15E+00 | 6.17E+12 | | |
| | 185.72 | I.D. | | | | 6.17E+12 | | |
| Pb-212 | Average:x | 1.58E+01 | +- 9.47E-01 | | | | 1.67E+04 | |
| | 238.63 | 1.59E+01 | +- 9.58E-01 | 8.42E-01 | 4.07E-01 | 1.67E+04 | | |
| | 300.09 | 1.24E+01 | +- 6.29E+00 | 9.66E+00 | 4.60E+00 | 1.67E+04 | | |
| Tl-208 | Average:x | 4.59E+00 | +- 5.60E-01 | | | | 1.27E+14 | |
| | 277.36 | 4.46E+00 | +- 2.51E+00 | 3.86E+00 | 1.82E+00 | 1.27E+14 | | |
| | 583.14 | 4.56E+00 | +- 5.79E-01 | 6.47E-01 | 3.09E-01 | 1.27E+14 | | |
| | 860.47 | 6.58E+00 | +- 4.31E+00 | 6.85E+00 | 3.29E+00 | 1.27E+14 | | |
| Pb-214 | Average:x | 1.83E+01 | +- 1.06E+00 | | | | 1.40E+07 | |
| | 295.22 | 1.75E+01 | +- 1.74E+00 | 1.82E+00 | 8.74E-01 | 1.40E+07 | | |
| | 351.99 | 1.88E+01 | +- 1.33E+00 | 1.28E+00 | 6.21E-01 | 1.40E+07 | | |
| Ra-228 | Average:x | 1.70E+01 | +- 1.75E+00 | | | | 5.04E+04 | |
| | 338.40 | 1.50E+01 | +- 2.68E+00 | 3.46E+00 | 1.66E+00 | 5.04E+04 | | |
| | 911.07 | 1.74E+01 | +- 2.65E+00 | 3.20E+00 | 1.53E+00 | 5.04E+04 | | |
| | 968.90 | 2.16E+01 | +- 4.69E+00 | 6.49E+00 | 3.13E+00 | 5.04E+04 | | |
| Sb-125 | Average:x | 6.71E-01 | +- 7.39E-01 | | | | 2.43E+04 | |
| | 463.51 | 5.92E+00 | +- 3.26E+00 | 5.11E+00 | 2.45E+00 | 2.43E+04 | | |
| | 427.95 | N | 3.87E-01 | +- 7.58E-01 | 1.27E+00 | 6.03E-01 | 2.43E+04 | |
| Bi-214 | Average:x | 1.58E+01 | +- 1.34E+00 | | | | 1.40E+07 | |
| | 609.32 | 1.56E+01 | +- 1.43E+00 | 1.51E+00 | 7.27E-01 | 1.40E+07 | | |

041047D10.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| | 1120.28 | | 1.73E+01 | +- 3.94E+00 | 5.07E+00 | 2.40E+00 | 1.40E+07 |
| Bi-212 | 727.17 | | 1.34E+01 | +- 7.09E+00 | 1.10E+01 | 5.27E+00 | 1.67E+04 |
| Co-56 | 1238.28 | | 2.29E+00 | +- 1.22E+00 | 1.87E+00 | 8.80E-01 | 1.86E+03 |
| K-40 | 1460.75 | | 9.97E+00 | +- 5.44E+00 | 8.32E+00 | 3.92E+00 | 1.12E+13 |
| Am-241 | 59.54 | N | 1.16E-01 | +- 8.65E-01 | 1.46E+00B | 7.08E-01 | 3.80E+06 |
| Eu-155 | 105.31 | N | 3.01E-01 | +- 8.77E-01 | 1.47E+00 | 7.10E-01 | 4.35E+04 |
| Co-57 | 122.07 | N | 6.92E-02 | +- 1.99E-01 | 3.47E-01 | 1.67E-01 | 6.48E+03 |
| Ce-144 | 133.53 | N | 7.81E-01 | +- 2.13E+00 | 3.52E+00r | 1.71E+00 | 6.82E+03 |
| Ce-139 | 165.85 | N | 1.64E-01 | +- 2.55E-01 | 4.22E-01 | 2.03E-01 | 3.30E+03 |
| Th-227 | 236.00 | N | 1.60E+01 | +- 4.21E+01 | 6.93E+01P | 3.46E+01 | 1.90E+05 |
| Cr-51 | 320.07 | N | 5.98E-01 | +- 6.19E+00 | 1.07E+01B | 5.06E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 1.77E+01 | +- 1.97E+01 | 3.22E+01 | 1.52E+01 | 1.93E+02 |
| Be-7 | 477.56 | N | 2.83E+00 | +- 4.10E+00 | 7.44E+00 | 3.53E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N | 1.24E+00 | +- 1.47E+00 | 1.12E+01P | 5.56E+00 | 1.44E+03 |
| Cs-134 | 604.66 | N | 1.08E+00 | +- 3.96E+00 | 6.52E+00P | 3.25E+00 | 1.81E+04 |
| Ru-106 | 621.84 | N | 5.32E-02 | +- 3.47E+00 | 5.99E+00 | 2.85E+00 | 8.84E+03 |
| Ag-110M | 657.75 | N | 5.17E-02 | +- 3.57E-01 | 6.15E-01 | 2.91E-01 | 6.00E+03 |
| Cs-137 | 661.62 | N | 7.05E-02 | +- 3.82E-01 | 6.67E-01 | 3.18E-01 | 2.64E+05 |
| Nb-94 | 702.50 | N | 2.43E-01 | +- 3.54E-01 | 5.86E-01 | 2.78E-01 | 1.78E+08 |
| Nb-95 | 765.82 | N | 8.87E-01 | +- 9.63E-01 | 1.75E+00R | 8.49E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 3.53E-01 | +- 6.12E-01 | 1.10E+00 | 5.22E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 1.28E-01 | +- 4.49E-01 | 7.62E-01 | 3.63E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N | 4.55E-01 | +- 5.16E-01 | 8.43E-01 | 3.95E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 1.29E+02 | +- 6.16E+01 | 8.97E+01 | 4.17E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 4.59E-01 | +- 2.28E+00 | 3.91E+00 | 1.85E+00 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 1.90E-01 | +- 1.58E+00 | 2.73E+00 | 1.29E+00 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 2.22E+00 | +- 1.58E+00 | 3.00E+00R | 1.46E+00 | 5.85E+03 |
| Na-22 | 1274.54 | N | 3.38E-02 | +- 5.05E-01 | 8.83E-01 | 4.18E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N | 0.00E+00 | +- 4.65E-01 | 8.14E-01 | 3.83E-01 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 1.39E+00 | +- 2.88E+00 | 4.84E+00 | 2.30E+00 | 1.17E+05 |
| Al-26 | 1808.65 | N | 9.06E-02 | +- 4.86E-01 | 8.47E-01 | 3.93E-01 | 6.31E+09 |

MEASURED TOTAL: 2.99E+02 +- 1.78E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|--------------|
| 1 | 46.42 | 95.11 | 49 | 43 | 34 | 230 | 0.90 | Unknown |
| 2 | 53.68 | 109.61 | 29 | 54 | 44 | 349 | 1.33 | Deleted |
| 4 | 74.78 | 151.77 | Pb-XRAY | 560 | 78 | 51 | 450 | 1.35 Unknown |
| 5 | 77.04 | 156.29 | V | 1028 | 89 | 51 | 450 | 1.30 Unknown |
| 6 | 83.89 | 169.98 | | 93 | 44 | 33 | 226 | 0.89 Unknown |
| 7 | 87.27 | 176.74 | Pb-XRAY | 333 | 62 | 41 | 316 | 1.18 Unknown |
| 8 | 89.89 | 181.98 | L | 217 | 61 | 44 | 361 | 1.32 Unknown |
| 10 | 129.22 | 260.56 | | 85 | 58 | 46 | 308 | 1.98 Unknown |
| 12 | 153.93 | 309.93 | | 45 | 33 | 25 | 139 | 0.89 Unknown |

041047D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 14 | 209.38 | 420.75 | 124 | 45 | 32 | 186 | 1.26 | Unknown |
| 16 | 241.75 | 485.43 | 332 | 55 | 34 | 189 | 1.61 | Unknown |
| 17 | 270.53 | 542.93 | 129 | 48 | 35 | 182 | 2.14 | Unknown |
| 18 | 274.63 | 551.12 | 29 | 26 | 19 | 84 | 1.03 | Unknown |
| 22 | 328.06 | 657.88 | 65 | 49 | 38 | 214 | 2.23 | Unknown |
| 26 | 511.13 | 1023.70 | 122 | 52 | 39 | 141 | 3.15 | Unknown |
| 27 | 558.54 | 1118.44 | 11 | 24 | 19 | 61 | 1.26 | Deleted |
| 31 | 768.26 | 1537.51 | 85 | 36 | 25 | 84 | 2.97 | Unknown |
| 34 | 935.26 | 1871.21 | 41 | 26 | 18 | 52 | 2.18 | Unknown |
| 38 | 1378.51 | 2756.91 | 26 | 29 | 22 | 61 | 3.82 | Unknown |
| 40 | 1730.11 | 3459.50 | 28 | 20 | 14 | 20 | 3.87 | Unknown |
| 41 | 1764.03 | 3527.27 | Bi-Z14 115 | 32 | 19 | 31 | 4.70 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-10 GS040601-6

Code: 041142D04A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 06/27/2004 18:20:47
Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.23E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 9.43E+001 g | Real Time 1822 Sec
Collection Efficiency 1.0000 | Spc. File 041142D04.SPC

Detector #: 4 (Detector 4)

Energy(keV) = -1.02 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 46.57 | 95.00 | 125 | 79 | 63 | 867 | 0.73 | a |
| 2 | 53.62 | 109.09 | 71 | 91 | 74 | 1089 | 0.77 | a NET< CL |
| 3 | 59.07 | 119.96 | 79 | 94 | 76 | 1162 | 0.82 | a |
| 4 | 63.35 | 128.52 | 530 | 107 | 80 | 1281 | 0.85 | a |
| 5 | 74.85 | 151.48 | 2146 | 145 | 92 | 1698 | 0.78 | a HiResid Wide Pk |
| 6 | 77.09 | 155.95 | 3669 | 151 | 74 | 1229 | 0.71 | b HiResid |
| 7 | 79.25 | 160.26 | 97 | 59 | 45 | 570 | 0.37 | c HiResid |
| 8 | 81.13 | 164.01 | 136 | 74 | 58 | 825 | 0.49 | d HiResid |
| 9 | 84.04 | 169.82 | 684 | 124 | 92 | 1568 | 1.06 | e HiResid |
| 10 | 87.22 | 176.18 | 1615 | 134 | 89 | 1453 | 1.02 | f HiResid |
| 11 | 89.94 | 181.59 | 1089 | 112 | 74 | 1113 | 0.90 | g HiResid |
| 12 | 92.81 | 187.33 | 2231 | 155 | 101 | 1618 | 1.23 | h HiResid |
| 13 | 94.69 | 191.09 | 369 | 124 | 97 | 1501 | 1.33 | i HiResid |
| 14 | 98.87 | 199.44 | 463 | 164 | 130 | 2074 | 1.94 | j HiResid |
| 15 | 105.38 | 212.42 | 292 | 98 | 76 | 1054 | 0.94 | a Wide Pk |
| 16 | 108.55 | 218.76 | 177 | 139 | 113 | 1757 | 1.67 | b |
| 17 | 112.82 | 227.29 | 155 | 73 | 56 | 703 | 0.69 | c |
| 18 | 115.28 | 232.19 | 114 | 83 | 66 | 878 | 0.75 | d |
| 19 | 129.14 | 259.86 | 277 | 79 | 59 | 777 | 0.72 | a |
| 20 | 143.95 | 289.43 | 283 | 102 | 79 | 1154 | 0.91 | a |
| 21 | 154.11 | 309.72 | 181 | 76 | 58 | 751 | 0.72 | a |
| 22 | 163.51 | 328.47 | 90 | 94 | 76 | 1063 | 0.98 | a |
| 23 | 185.94 | 373.26 | 2086 | 127 | 72 | 958 | 1.00 | a |

041142D04.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 24 | 205.14 | 411.59 | 97 | 85 | 68 | 850 | 1.00 | a |
| 25 | 209.20 | 419.70 | 551 | 86 | 59 | 708 | 0.85 | b |
| 26 | 235.97 | 473.14 | 184 | 70 | 53 | 573 | 0.89 | a HiResid |
| 27 | 238.58 | 478.37 | 6509 | 178 | 61 | 687 | 1.00 | b HiResid |
| 28 | 241.77 | 484.72 | 2370 | 128 | 69 | 802 | 1.19 | c HiResid |
| 29 | 252.57 | 506.29 | 20 | 43 | 35 | 301 | 0.49 | a NET< CL |
| 30 | 256.18 | 513.50 | 37 | 62 | 50 | 501 | 0.74 | b NET< CL |
| 31 | 258.87 | 518.88 | 77 | 63 | 50 | 501 | 0.80 | c |
| 32 | 270.11 | 541.31 | 847 | 108 | 75 | 785 | 1.71 | a Wide Pk |
| 33 | 274.87 | 550.82 | 124 | 73 | 57 | 550 | 1.14 | b |
| 34 | 277.36 | 555.79 | 264 | 83 | 63 | 628 | 1.37 | c |
| 35 | 287.80 | 576.63 | 38 | 58 | 46 | 432 | 0.85 | a NET< CL |
| 36 | 295.17 | 591.33 | 4282 | 149 | 58 | 581 | 1.07 | a |
| 37 | 300.03 | 601.05 | 336 | 66 | 45 | 415 | 0.84 | b |
| 38 | 327.90 | 656.69 | 248 | 69 | 50 | 468 | 0.93 | a |
| 39 | 338.16 | 677.18 | 1205 | 92 | 49 | 446 | 1.05 | a |
| 40 | 351.77 | 704.34 | 7178 | 181 | 51 | 450 | 1.19 | a |
| 41 | 409.54 | 819.68 | 78 | 57 | 44 | 364 | 0.95 | a |
| 42 | 414.16 | 828.91 | 9 | 41 | 33 | 243 | 0.59 | b NET< CL |
| 43 | 454.83 | 910.11 | 27 | 44 | 35 | 263 | 0.90 | a NET< CL |
| 44 | 462.85 | 926.13 | 365 | 60 | 39 | 293 | 1.14 | a |
| 45 | 480.48 | 961.32 | 27 | 33 | 26 | 162 | 0.63 | a |
| 46 | 487.15 | 974.64 | 51 | 48 | 38 | 284 | 1.22 | b |
| 47 | 510.67 | 1021.58 | 500 | 66 | 40 | 302 | 1.34 | a |
| 48 | 526.71 | 1053.61 | 44 | 45 | 35 | 232 | 1.31 | a |
| 49 | 562.85 | 1125.77 | 40 | 40 | 31 | 209 | 1.01 | a |
| 50 | 583.00 | 1165.99 | 1782 | 98 | 41 | 290 | 1.40 | a |
| 51 | 609.08 | 1218.07 | 4997 | 149 | 38 | 258 | 1.49 | a |
| 52 | 665.06 | 1329.83 | 127 | 51 | 38 | 245 | 1.54 | a |
| 53 | 726.97 | 1453.44 | 357 | 55 | 33 | 210 | 1.46 | a |
| 54 | 755.09 | 1509.57 | 46 | 35 | 26 | 149 | 1.10 | a |
| 55 | 768.11 | 1535.57 | 328 | 56 | 35 | 245 | 1.51 | a |
| 56 | 785.48 | 1570.25 | 161 | 46 | 31 | 181 | 1.68 | a |
| 57 | 794.71 | 1588.67 | 179 | 45 | 30 | 163 | 1.59 | a |
| 58 | 805.91 | 1611.04 | 94 | 37 | 26 | 135 | 1.54 | a |
| 59 | 839.73 | 1678.56 | 61 | 44 | 34 | 212 | 1.60 | a |
| 60 | 860.39 | 1719.80 | 186 | 49 | 33 | 197 | 1.72 | a |
| 61 | 903.43 | 1805.74 | 24 | 31 | 24 | 118 | 1.23 | a |
| 62 | 910.93 | 1820.71 | 1203 | 78 | 30 | 160 | 1.80 | a |
| 63 | 933.73 | 1866.22 | 231 | 44 | 27 | 124 | 1.80 | a |
| 64 | 964.50 | 1927.66 | 210 | 49 | 33 | 182 | 1.92 | a |
| 65 | 968.61 | 1935.86 | 646 | 63 | 31 | 167 | 1.74 | b |
| 66 | 1000.47 | 1999.47 | 96 | 40 | 28 | 137 | 2.24 | a |
| 67 | 1119.84 | 2237.80 | 968 | 71 | 27 | 133 | 2.19 | a |
| 68 | 1133.60 | 2265.26 | 30 | 26 | 20 | 79 | 1.66 | a |
| 69 | 1154.63 | 2307.25 | 94 | 34 | 23 | 105 | 1.85 | a |
| 70 | 1237.71 | 2473.12 | 351 | 48 | 25 | 111 | 2.20 | a |
| 71 | 1280.86 | 2559.27 | 58 | 37 | 28 | 123 | 2.66 | a |
| 72 | 1377.04 | 2751.30 | 269 | 44 | 24 | 99 | 2.16 | a |

041142D04.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 73 | 1400.99 | 2799.13 | 58 | 33 | 24 | 100 | 2.28 | a |
| 74 | 1407.55 | 2812.22 | 140 | 37 | 23 | 93 | 2.17 | b |
| 75 | 1460.29 | 2917.51 | 48 | 39 | 30 | 131 | 2.97 | a |
| 76 | 1509.00 | 3014.77 | 88 | 34 | 23 | 92 | 2.34 | a |
| 77 | 1587.11 | 3170.71 | 30 | 31 | 24 | 119 | 1.50 | a |
| 78 | 1620.54 | 3237.46 | 31 | 50 | 40 | 157 | 5.37 | a NET< CL Wide Pk |
| 79 | 1660.93 | 3318.08 | 43 | 30 | 22 | 70 | 3.32 | a |
| 80 | 1728.71 | 3453.42 | 160 | 35 | 19 | 56 | 2.91 | a |
| 81 | 1763.72 | 3523.31 | 737 | 58 | 16 | 40 | 2.77 | a |
| 82 | 1846.88 | 3689.33 | 71 | 24 | 14 | 36 | 1.98 | a |

041142D04.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.57 | 125 | 79 | 63 | 123 | 79 | 63 | |
| 2 | 53.62 | 71 | 91 | 74 | 70 | 91 | 74 | NET<CL |
| 4 | 63.35 | 530 | 107 | 80 | 525 | 107 | 80 | |
| 5 | 74.85 | 2146 | 145 | 92 | 2142 | 145 | 92 | |
| 6 | 77.09 | 3669 | 151 | 74 | 3664 | 151 | 75 | |
| 10 | 87.22 | 1615 | 134 | 89 | 1615 | 134 | 89 | |
| 11 | 89.94 | 1089 | 112 | 74 | 1089 | 112 | 74 | |
| 12 | 92.81 | 2231 | 155 | 101 | 2220 | 155 | 101 | |
| 18 | 115.28 | 114 | 83 | 66 | 113 | 83 | 66 | |
| 23 | 185.94 | 2086 | 127 | 72 | 2078 | 127 | 72 | |
| 27 | 238.58 | 6509 | 178 | 61 | 6504 | 178 | 61 | |
| 39 | 338.16 | 1205 | 92 | 49 | 1203 | 92 | 49 | |
| 40 | 351.77 | 7178 | 181 | 51 | 7174 | 181 | 52 | |
| 47 | 510.67 | 500 | 66 | 40 | 461 | 67 | 42 | |
| 50 | 583.00 | 1782 | 98 | 41 | 1780 | 98 | 41 | |
| 51 | 609.08 | 4997 | 149 | 38 | 4994 | 149 | 39 | |
| 62 | 910.93 | 1203 | 78 | 30 | 1203 | 79 | 30 | |
| 75 | 1460.29 | 48 | 39 | 30 | 42 | 39 | 30 | |

041142D04.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-10 GS040601-6

Code: 041142D04A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 06/27/2004 18:20:47
Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.23e+003 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 9.43e+001 g | Real Time 1822 Sec
Collection Efficiency 1.0000 | Spectrum File 041142D04.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04) (Sh11).EFF (Geo 11 Eff Cal)
Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E (pCi/g) | Concentration | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|---------------|-----------|----------------|----------------|
| Am-241 | | 59.54 | 1.91E+00 | +- 2.26E+00 | 3.71E+00 | 1.82E+00 | 3.80E+06 |
| Th-234 | Average:x | 1.21E+02 | +- 8.03E+00 | | | | 3.92E+13 |
| | | 63.29 | 9.79E+01 | +- 2.00E+01 | 3.03E+01 | 1.49E+01 | 3.92E+13 |
| | | 92.50 | 1.25E+02 | +- 8.76E+00 | 1.16E+01 | 5.72E+00 | 3.92E+13 |
| Eu-155 | | 105.31 | 3.71E+00 | +- 1.25E+00 | 1.96E+00 | 9.61E-01 | 4.35E+04 |
| Pb-212 | Average:x | 4.83E+01 | +- 1.31E+00 | | | | 1.67E+04 |
| | | 115.18 | 4.95E+01 | +- 3.64E+01 | 5.91E+01 | 2.90E+01 | 1.67E+04 |
| | | 238.63 | 4.85E+01 | +- 1.33E+00 | 9.33E-01 | 4.56E-01 | 1.67E+04 |
| | | 300.09 | 4.01E+01 | +- 7.90E+00 | 1.11E+01 | 5.41E+00 | 1.67E+04 |
| U-235 | Average:x | 5.65E+00 | +- 1.80E+00 | | | | 6.17E+12 |
| | | 143.76 | 6.04E+00 | +- 2.17E+00 | 3.43E+00 | 1.68E+00 | 6.17E+12 |
| | | 163.35 | 4.26E+00 | +- 4.48E+00 | 7.34E+00 | 3.61E+00 | 6.17E+12 |
| | | 185.72 | I.D. | | | | 6.17E+12 |
| | | 205.31 | 5.32E+00 | +- 4.65E+00 | 7.59E+00 | 3.72E+00 | 6.17E+12 |
| Th-227 | | 236.00 | 4.58E+00 | +- 1.75E+00 | 2.72E+00 | 1.32E+00 | 1.90E+05 |
| Tl-208 | Average:x | 1.40E+01 | +- 7.45E-01 | | | | 1.27E+14 |
| | | 277.36 | 1.45E+01 | +- 4.57E+00 | 7.07E+00 | 3.46E+00 | 1.27E+14 |
| | | 583.14 | 1.40E+01 | +- 7.71E-01 | 6.67E-01 | 3.23E-01 | 1.27E+14 |
| | | 860.47 | 1.41E+01 | +- 3.71E+00 | 5.28E+00 | 2.54E+00 | 1.27E+14 |
| Pb-214 | Average:x | 8.20E+01 | +- 1.67E+00 | | | | 1.40E+07 |
| | | 295.22 | 8.15E+01 | +- 2.83E+00 | 2.27E+00 | 1.11E+00 | 1.40E+07 |
| | | 351.99 | 8.22E+01 | +- 2.07E+00 | 1.21E+00 | 5.92E-01 | 1.40E+07 |
| Ra-228 | Average:x | 4.54E+01 | +- 2.01E+00 | | | | 5.04E+04 |
| | | 338.40 | 4.46E+01 | +- 3.40E+00 | 3.75E+00 | 1.83E+00 | 5.04E+04 |
| | | 911.07 | 4.70E+01 | +- 3.07E+00 | 2.49E+00 | 1.19E+00 | 5.04E+04 |

041142D04.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|---|--------------|-------------|-----------------------|-----------|----------|----------------|----------------|
| | | | 968.90 | 4.36E+01 | +- 4.26E+00 | 4.34E+00 | 2.08E+00 | 5.04E+04 | |
| Cs-134 | Average:x | | 8.01E-01 | +- 2.82E-01 | . | . | . | . | 1.81E+04 |
| | | | 563.26 | 3.27E+00 | +- 3.26E+00 | 5.31E+00 | 2.54E+00 | 1.81E+04 | |
| | | | 604.66 | N 1.84E-01 | +- 3.50E-01 | 5.83E-01B | 2.81E-01 | 1.81E+04 | |
| | | | 795.76 | 1.93E+00 | +- 4.83E-01 | 6.69E-01 | 3.20E-01 | 1.81E+04 | |
| Bi-214 | Average:x | | 7.52E+01 | +- 2.07E+00 | . | . | . | . | 1.40E+07 |
| | | | 609.32 | 7.50E+01 | +- 2.24E+00 | 1.20E+00 | 5.81E-01 | 1.40E+07 | |
| | | | 1120.28 | 7.64E+01 | +- 5.57E+00 | 4.54E+00 | 2.17E+00 | 1.40E+07 | |
| Bi-212 | | | 727.17 | 4.63E+01 | +- 7.12E+00 | 8.86E+00 | 4.25E+00 | 1.67E+04 | |
| Pa-234m | | | 1001.03 | 1.76E+02 | +- 7.23E+01 | 1.08E+02 | 5.17E+01 | 3.92E+13 | |
| K-40 | | | 1460.75 | 5.80E+00 | +- 5.32E+00 | 8.62E+00 | 4.13E+00 | 1.12E+13 | |
| Co-57 | | | 122.07 | N-7.79E-02 | +- 2.60E-01 | 4.40E-01 | 2.16E-01 | 6.48E+03 | |
| Ce-144 | | | 133.53 | N-7.23E-01 | +- 1.96E+00 | 3.32E+00 | 1.63E+00 | 6.82E+03 | |
| Ce-139 | | | 165.85 | N 3.53E-02 | +- 3.07E-01 | 5.13E-01B | 2.51E-01 | 3.30E+03 | |
| Cr-51 | | | 320.07 | N 2.12E+00 | +- 8.12E+00 | 1.36E+01 | 6.62E+00 | 6.65E+02 | |
| I-131 | | | 364.48 | N 1.04E+01 | +- 2.65E+01 | 4.42E+01 | 2.15E+01 | 1.93E+02 | |
| Sb-125 | | | 427.95 | N-7.85E-02 | +- 8.95E-01 | 1.52E+00 | 7.38E-01 | 2.43E+04 | |
| Be-7 | | | 477.56 | N 2.47E+00 | +- 5.14E+00 | 8.57E+00B | 4.15E+00 | 1.28E+03 | |
| Sb-124 | | | 602.71 | N-6.13E-02 | +- 5.99E-01 | 1.02E+00 | 4.95E-01 | 1.44E+03 | |
| Ru-106 | | | 621.84 | N 4.05E-01 | +- 3.33E+00 | 5.66E+00 | 2.72E+00 | 8.84E+03 | |
| Ag-110M | | | 657.75 | N-2.65E-01 | +- 4.02E-01 | 7.05E-01 | 3.40E-01 | 6.00E+03 | |
| Cs-137 | | | 661.62 | N 1.91E-01 | +- 5.84E-01 | 9.65E-01R | 4.71E-01 | 2.64E+05 | |
| Nb-94 | | | 702.50 | N 4.41E-01 | +- 3.64E-01 | 5.88E-01 | 2.83E-01 | 1.78E+08 | |
| Nb-95 | | | 765.82 | N-2.65E+00 | +- 1.08E+00 | 2.04E+00R | 9.98E-01 | 1.54E+03 | |
| Co-58 | | | 810.75 | N-7.42E-02 | +- 5.37E-01 | 9.29E-01B | 4.45E-01 | 1.70E+03 | |
| Mn-54 | | | 834.81 | N 3.08E-01 | +- 4.27E-01 | 7.06E-01B | 3.39E-01 | 7.49E+03 | |
| Sc-46 | | | 889.26 | N 7.11E-02 | +- 5.94E-01 | 1.01E+00 | 4.86E-01 | 2.01E+03 | |
| Eu-154 | | | 1004.80 | N 5.47E-01 | +- 2.83E+00 | 4.74E+00R | 2.29E+00 | 7.45E+04 | |
| Fe-59 | | | 1099.22 | N-1.19E+00 | +- 1.46E+00 | 2.65E+00 | 1.26E+00 | 1.08E+03 | |
| Zn-65 | | | 1115.52 | N-1.03E+00 | +- 1.34E+00 | 2.42E+00R | 1.17E+00 | 5.85E+03 | |
| Co-56 | | | 1238.28 | N 1.77E+00 | +- 2.52E+00 | 4.08E+00R | 2.00E+00 | 1.86E+03 | |
| Na-22 | | | 1274.54 | N 5.66E-01 | +- 5.74E-01 | 8.86E-01R | 4.24E-01 | 2.28E+04 | |
| Co-60 | | | 1332.51 | N 1.47E-01 | +- 4.47E-01 | 7.58E-01 | 3.60E-01 | 4.62E+04 | |
| Eu-152 | | | 1408.08 | N 1.42E+00 | +- 4.10E+00 | 6.78E+00R | 3.30E+00 | 1.17E+05 | |
| Al-26 | | | 1808.65 | N-3.21E-02 | +- 3.87E-01 | 6.92E-01 | 3.21E-01 | 6.31E+09 | |

MEASURED TOTAL: 6.51E+02 +- 1.64E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|--------------------|------------|---------------|-------------|------------|------------|---------|
| 1 | 46.57 | 95.00 | 123 | 79 | 63 | 867 | 0.73 | Unknown |
| 2 | 53.62 | 109.09 | 70 | 91 | 74 | 1089 | 0.77 | Deleted |
| 5 | 74.85 | 151.48 Pb-KXAY2142 | | 145 | 92 | 1698 | 0.78 | Unknown |
| 6 | 77.09 | 155.95 | 3664 | 151 | 75 | 1229 | 0.71 | Unknown |
| 7 | 79.25 | 160.26 | 97 | 59 | 45 | 570 | 0.37 | Unknown |

041142D04.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|------------------------------|------------------|----------------|---------------|---------------|----------|
| 8 | 81.13 | 164.01 | 136 | 74 | 58 | 825 | 0.49 | Unknown |
| 9 | 84.04 | 169.82 | Pa-ZZ8 684 | 124 | 92 | 1568 | 1.06 | Unknown |
| 10 | 87.22 | 176.18 | Pb-ZAY 1615 | 134 | 89 | 1453 | 1.02 | Unknown |
| 11 | 89.94 | 181.59 | Pa-Z34M 1089 | 112 | 74 | 1113 | 0.90 | Unknown |
| 13 | 94.69 | 191.09 | Pa-Z34M 369 | 124 | 97 | 1501 | 1.33 | Unknown |
| 14 | 98.87 | 199.44 | Pb-ZAY 463 | 164 | 130 | 2074 | 1.94 | 1120DEsc |
| 16 | 108.55 | 218.76 | 177 | 139 | 113 | 1757 | 1.67 | Unknown |
| 17 | 112.82 | 227.29 | 155 | 73 | 56 | 703 | 0.69 | Unknown |
| 19 | 129.14 | 259.86 | 277 | 79 | 59 | 777 | 0.72 | Unknown |
| 21 | 154.11 | 309.72 | 181 | 76 | 58 | 751 | 0.72 | Unknown |
| 25 | 209.20 | 419.70 | Ac-ZZ8 551 | 86 | 59 | 708 | 0.85 | Unknown |
| 28 | 241.77 | 484.72 | Pb-Z14 2370 | 128 | 69 | 802 | 1.19 | Unknown |
| 29 | 252.57 | 506.29 | 20 | 43 | 35 | 301 | 0.49 | Deleted |
| 30 | 256.18 | 513.50 | 37 | 62 | 50 | 501 | 0.74 | Deleted |
| 31 | 258.87 | 518.88 | 77 | 63 | 50 | 501 | 0.80 | Unknown |
| 32 | 270.11 | 541.31 | Ac-ZZ8 847 | 108 | 75 | 785 | 1.71 | Unknown |
| 33 | 274.87 | 550.82 | 124 | 73 | 57 | 550 | 1.14 | Unknown |
| 35 | 287.80 | 576.63 | 38 | 58 | 46 | 432 | 0.85 | Deleted |
| 38 | 327.90 | 656.69 | Ac-ZZ8 248 | 69 | 50 | 468 | 0.93 | Unknown |
| 41 | 409.54 | 819.68 | 78 | 57 | 44 | 364 | 0.95 | Unknown |
| 42 | 414.16 | 828.91 | 9 | 41 | 33 | 243 | 0.59 | Deleted |
| 43 | 454.83 | 910.11 | 27 | 44 | 35 | 263 | 0.90 | Deleted |
| 44 | 462.85 | 926.13 | Ac-ZZ8 365 | 60 | 39 | 293 | 1.14 | Unknown |
| 45 | 480.48 | 961.32 | 27 | 33 | 26 | 162 | 0.63 | Unknown |
| 46 | 487.15 | 974.64 | 51 | 48 | 38 | 284 | 1.22 | Unknown |
| 47 | 510.67 | 1021.58 | ANN. PK 461 | 67 | 42 | 302 | 1.34 | Unknown |
| 48 | 526.71 | 1053.61 | 44 | 45 | 35 | 232 | 1.31 | Unknown |
| 52 | 665.06 | 1329.83 | 127 | 51 | 38 | 245 | 1.54 | Unknown |
| 54 | 755.09 | 1509.57 | 46 | 35 | 26 | 149 | 1.10 | Unknown |
| 55 | 768.11 | 1535.57-Bi-Z14 | 328 Pb-Z14 | 56 | 35 | 245 | 1.51 | Unknown |
| 56 | 785.48 | 1570.25 | Pb-Z14 161 Bi-Z14 46 Pa-Z34M | 31 | 181 | 181 | 1.68 | Unknown |
| 58 | 805.91 | 1611.04 | 94 | 37 | 26 | 135 | 1.54 | Unknown |
| 59 | 839.73 | 1678.56 | 61 | 44 | 34 | 212 | 1.60 | Unknown |
| 61 | 903.43 | 1805.74 | 25 | 31 | 24 | 118 | 1.23 | Unknown |
| 63 | 933.73 | 1866.22-Bi-Z14 | 231 | 44 | 27 | 124 | 1.80 | Unknown |
| 64 | 964.50 | 1927.66 | Ac-ZZ8 210 Bi-Z14 | 49 | 33 | 182 | 1.92 | Unknown |
| 68 | 1133.60 | 2265.26 | 30 | 26 | 20 | 79 | 1.66 | Unknown |
| 69 | 1154.63 | 2307.25 | 94 | 34 | 23 | 105 | 1.85 | Unknown |
| 70 | 1237.71 | 2473.12 | Bi-Z14 351 | 48 | 25 | 111 | 2.20 | Unknown |
| 71 | 1280.86 | 2559.27 | 58 | 37 | 28 | 123 | 2.66 | Unknown |
| 72 | 1377.04 | 2751.30 | Bi-Z14 269 | 44 | 24 | 99 | 2.16 | Unknown |
| 73 | 1400.99 | 2799.13 | 58 | 33 | 24 | 100 | 2.28 | Unknown |
| 74 | 1407.55 | 2812.22-Bi-Z14 | 140 | 37 | 23 | 93 | 2.17 | Unknown |
| 76 | 1509.00 | 3014.77 | 88 | 34 | 23 | 92 | 2.34 | Unknown |
| 77 | 1587.11 | 3170.71 | Ac-ZZ8 30 | 31 | 24 | 119 | 1.50 | Unknown |
| 78 | 1620.54 | 3237.46 | 31 | 50 | 40 | 157 | 5.37 | Deleted |
| 79 | 1660.93 | 3318.08 | 43 | 30 | 22 | 70 | 3.32 | Unknown |
| 80 | 1728.71 | 3453.42-Bi-Z14 | 160 | 35 | 19 | 56 | 2.91 | Unknown |
| 81 | 1763.72 | 3523.31-Bi-Z14 | 737 | 58 | 16 | 40 | 2.77 | Unknown |

041142D04.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 82 | 1846.88 | 3689.33 Bi-Zr | 71 | 24 | 14 | 36 | 1.98 | Unknown |

000193

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-11 GS040601-6

Code: 041001D07A

Sampling Start: 05/05/2004 12:00:00 | Counting Start: 06/27/2004 18:20:57
Sampling Stop: 05/05/2004 12:00:00 | Decay Time. 1.28E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.01E+002 g | Real Time 1810 Sec
Collection Efficiency 1.0000 | Spc. File 041001D07.SPC

Detector #: 7 (Detector 7)

Energy(keV) = -2.07 + 0.500*Ch + 4.21E-07*Ch^2 +-5.86E-11*Ch^3 06/27/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 46.40 | 96.88 | 55 | 23 | 14 | 45 | 0.73 | a |
| 2 | 63.33 | 130.71 | 39 | 28 | 21 | 90 | 0.80 | a |
| 3 | 74.61 | 153.26 | 114 | 33 | 21 | 89 | 0.82 | a |
| 4 | 76.96 | 157.95 | 213 | 39 | 21 | 89 | 0.82 | b |
| 5 | 83.92 | 171.85 | 29 | 28 | 21 | 89 | 0.82 | a |
| 6 | 87.15 | 178.30 | 48 | 29 | 21 | 89 | 0.76 | b |
| 7 | 92.83 | 189.66 | 67 | 36 | 27 | 113 | 1.30 | a |
| 8 | 143.42 | 290.72 | 16 | 19 | 14 | 43 | 0.60 | a |
| 9 | 185.77 | 375.34 | 67 | 27 | 18 | 54 | 1.10 | a |
| 10 | 238.41 | 480.48 | 174 | 32 | 15 | 41 | 0.94 | a |
| 11 | 241.81 | 487.26 | 42 | 20 | 13 | 34 | 0.87 | b |
| 12 | 295.10 | 593.69 | 91 | 23 | 10 | 20 | 1.04 | a |
| 13 | 338.31 | 679.99 | 45 | 19 | 11 | 24 | 0.98 | a |
| 14 | 351.85 | 707.01 | 171 | 30 | 12 | 23 | 1.12 | a |
| 15 | 510.45 | 1023.64 | 41 | 21 | 14 | 33 | 1.70 | a |
| 16 | 583.22 | 1168.88 | 30 | 17 | 10 | 21 | 1.10 | a |
| 17 | 609.37 | 1221.08 | 98 | 24 | 11 | 21 | 1.29 | a |
| 18 | 910.87 | 1822.65 | 50 | 17 | 7 | 10 | 1.57 | a |
| 19 | 1460.51 | 2919.05 | 159 | 26 | 5 | 5 | 1.80 | a |

041001D07.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.40 | 55 | 23 | 14 | 39 | 23 | 16 | |
| 2 | 63.33 | 39 | 29 | 21 | 27 | 29 | 22 | |
| 3 | 74.61 | 114 | 33 | 21 | 111 | 34 | 21 | |
| 4 | 76.96 | 213 | 39 | 21 | 210 | 39 | 21 | |
| 5 | 83.92 | 29 | 28 | 21 | 26 | 28 | 22 | |
| 7 | 92.83 | 67 | 36 | 27 | 51 | 37 | 28 | |
| 8 | 143.42 | 16 | 19 | 14 | 13 | 20 | 15 | NET<CL |
| 9 | 185.77 | 67 | 27 | 18 | 59 | 27 | 19 | |
| 10 | 238.41 | 174 | 32 | 15 | 167 | 32 | 16 | |
| 13 | 338.31 | 45 | 19 | 11 | 43 | 20 | 12 | |
| 14 | 351.85 | 171 | 30 | 12 | 169 | 30 | 12 | |
| 15 | 510.45 | 41 | 21 | 14 | 7 | 22 | 18 | NET<CL |
| 16 | 583.22 | 30 | 17 | 10 | 29 | 17 | 11 | |
| 17 | 609.37 | 98 | 24 | 11 | 96 | 24 | 11 | |
| 18 | 910.87 | 50 | 17 | 7 | 48 | 17 | 8 | |
| 19 | 1460.51 | 159 | 26 | 5 | 155 | 26 | 6 | |

041001D07.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo.11 / Solid

Sample ID: 0405096-11 GS040601-6

Code: 041001D07A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 06/27/2004 18:20:57 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time | 1.28e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.01e+002 g | Real Time | 1810 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041001D07.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 7 (Detector 7)

Efficiency File: (D07) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | | N | ENERGY (keV) | E (T) | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------|--------------|----------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | Average:x | 1.85E+00 | +- | 1.11E+00 | | | 2.80E+00 | 1.32E+00 | 3.92E+13 |
| | 63.29 | 1.58E+00 | +- | 1.72E+00 | 2.32E+00 | 1.11E+00 | 7.77E-01 | 3.56E-01 | 3.92E+13 |
| | 92.50 | 2.03E+00 | +- | 1.46E+00 | 2.32E+00 | 1.11E+00 | 7.77E-01 | 3.56E-01 | 3.92E+13 |
| U-235 | 143.76 | N | 3.06E-01 | +- | 4.65E-01 | I.D. | 2.48E-01 | 6.17E-01 | 6.17E+12 |
| | 185.72 | | | | | | | | 6.17E+12 |
| Pb-212 | 238.63 | | 1.55E+00 | +- | 2.99E-01 | 3.19E-01 | 1.47E-01 | 1.47E-01 | 1.67E+04 |
| Pb-214 | Average:x | 2.35E+00 | +- | 3.39E-01 | | | 5.61E-01 | 2.48E-01 | 1.40E+07 |
| | 295.22 | | 2.18E+00 | +- | 5.47E-01 | | 3.90E-01 | 1.75E-01 | 1.40E+07 |
| | 351.99 | | 2.46E+00 | +- | 4.33E-01 | | 1.27E-01 | 1.27E-01 | 1.40E+07 |
| Ra-228 | Average:x | 2.27E+00 | +- | 6.31E-01 | | | 1.25E+00 | 5.61E-01 | 5.04E+04 |
| | 338.40 | | 2.03E+00 | +- | 9.15E-01 | | 5.61E-01 | 5.61E-01 | 5.04E+04 |
| | 911.07 | | 2.48E+00 | +- | 8.72E-01 | | 9.67E-01 | 4.13E-01 | 5.04E+04 |
| Tl-208 | 583.14 | | 2.96E-01 | +- | 1.71E-01 | | 2.45E-01 | 1.09E-01 | 1.27E+14 |
| Bi-214 | 609.32 | | 1.86E+00 | +- | 4.62E-01 | | 4.88E-01 | 2.18E-01 | 1.40E+07 |
| K-40 | 1460.75 | | 2.92E+01 | +- | 4.88E+00 | | 2.79E+00 | 1.14E+00 | 1.12E+13 |
| Am-241 | 59.54 | N | 3.54E-02 | +- | 1.60E-01 | | 2.77E-01B | 1.29E-01 | 3.80E+06 |
| Eu-155 | 105.31 | N | -7.80E-02 | +- | 2.09E-01 | | 3.86E-01 | 1.78E-01 | 4.35E+04 |
| Co-57 | 122.07 | N | 2.24E-02 | +- | 6.25E-02 | | 1.08E-01 | 4.95E-02 | 6.48E+03 |
| Ce-144 | 133.53 | N | -5.66E-01 | +- | 5.24E-01 | | 1.02E+00 | 4.75E-01 | 6.82E+03 |
| Ce-139 | 165.85 | N | 3.27E-02 | +- | 9.56E-02 | | 1.65E-01 | 7.60E-02 | 3.30E+03 |
| Th-227 | 236.00 | N | -2.47E-01 | +- | 7.80E-01 | | 1.43E+00R | 6.73E-01 | 1.90E+05 |
| Cr-51 | 320.07 | N | -2.24E+00 | +- | 3.32E+00 | | 6.37E+00 | 2.93E+00 | 6.65E+02 |
| I-131 | 364.48 | N | -3.69E+00 | +- | 9.24E+00 | | 1.79E+01 | 8.03E+00 | 1.93E+02 |
| Sb-125 | 427.95 | N | -2.36E-01 | +- | 2.58E-01 | | 5.48E-01 | 2.44E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | -2.71E-01 | +- | 1.62E+00 | | 3.11E+00 | 1.37E+00 | 1.28E+03 |

041001D07.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|----------|-------------------|-------------------|
| Sb-124 | 602.71 | N-1.67E-02 | +- 2.14E-01 | 4.01E-01 | 1.78E-01 | 1.44E+03 | |
| Cs-134 | 604.66 | N 2.88E-02 | +- 1.23E-01 | 2.20E-01B | 9.72E-02 | 1.81E+04 | |
| Ru-106 | 621.84 | N 2.06E-01 | +- 1.05E+00 | 1.94E+00 | 8.31E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N-5.95E-02 | +- 1.37E-01 | 2.75E-01 | 1.21E-01 | 6.00E+03 | |
| Cs-137 | 661.62 | N 7.58E-02 | +- 1.31E-01 | 2.24E-01 | 9.65E-02 | 2.64E+05 | |
| Nb-94 | 702.50 | N-3.02E-02 | +- 1.52E-01 | 2.85E-01 | 1.28E-01 | 1.78E+08 | |
| Bi-212 | 727.17 | N 2.55E+00 | +- 1.99E+00 | 2.91E+00 | 1.22E+00 | 1.67E+04 | |
| Nb-95 | 765.82 | N-9.93E-02 | +- 2.29E-01 | 4.58E-01 | 2.02E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-6.99E-02 | +- 1.88E-01 | 3.87E-01 | 1.66E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N 6.14E-02 | +- 1.50E-01 | 2.64E-01 | 1.14E-01 | 7.49E+03 | |
| Sc-46 | 889.26 | N-2.00E-02 | +- 2.23E-01 | 4.26E-01 | 1.86E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 2.20E+01 | +- 2.63E+01 | 4.26E+01 | 1.80E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N 3.25E-01 | +- 7.97E-01 | 1.42E+00 | 5.98E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 4.43E-01 | +- 6.94E-01 | 1.17E+00 | 5.00E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N-3.49E-01 | +- 3.69E-01 | 8.12E-01 | 3.56E-01 | 5.85E+03 | |
| Co-56 | 1238.28 | N-4.22E-02 | +- 4.99E-01 | 9.46E-01 | 4.16E-01 | 1.86E+03 | |
| Na-22 | 1274.54 | N 1.89E-02 | +- 1.36E-01 | 2.67E-01 | 1.08E-01 | 2.28E+04 | |
| Co-60 | 1332.51 | N 1.93E-02 | +- 1.59E-01 | 3.07E-01 | 1.27E-01 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 4.80E-01 | +- 8.79E-01 | 1.52E+00 | 6.31E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N-3.82E-02 | +- 1.26E-01 | 3.00E-01 | 1.15E-01 | 6.31E+09 | |

MEASURED TOTAL: 6.60E+01 +- 4.11E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.40 | 96.88 | 39 | 23 | 16 | 45 | 0.73 | Unknown |
| 3 | 74.61 | 153.26 | 111 | 34 | 21 | 89 | 0.82 | Unknown |
| 4 | 76.96 | 157.95 | 210 | 39 | 21 | 89 | 0.82 | Unknown |
| 5 | 83.92 | 171.85 | 26 | 28 | 22 | 89 | 0.82 | Unknown |
| 6 | 87.15 | 178.30 | 49 | 29 | 21 | 89 | 0.76 | Unknown |
| 11 | 241.81 | 487.26 | 42 | 20 | 13 | 34 | 0.87 | Unknown |
| 15 | 510.45 | 1023.64 | 7 | 22 | 18 | 33 | 1.70 | Deleted |

000202

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-11D GS040601-6

Code: 041048D10A

Sampling Start: 05/05/2004 12:00:00 | Counting Start: 06/27/2004 18:21:07
Sampling Stop: 05/05/2004 12:00:00 | Decay Time. 1.28E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.02E+002 g | Real Time 1810 Sec
Collection Efficiency 1.0000 | Spc. File 041048D10.SPC

Detector #: 10 (Detector 10)

Energy (keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000
-----=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.24 | 94.74 | 57 | 49 | 39 | 246 | 1.64 | a |
| 2 | 63.41 | 129.05 | 54 | 40 | 31 | 197 | 1.01 | a |
| 3 | 74.76 | 151.73 | 189 | 45 | 29 | 177 | 1.01 | a |
| 4 | 77.02 | 156.26 | 341 | 57 | 36 | 236 | 1.33 | b |
| 5 | 86.94 | 176.08 | 68 | 35 | 25 | 146 | 0.85 | a |
| 6 | 92.92 | 188.02 | 173 | 51 | 36 | 234 | 1.36 | b |
| 7 | 185.91 | 373.84 | 186 | 42 | 27 | 131 | 1.35 | a |
| 8 | 238.71 | 479.34 | 419 | 53 | 27 | 130 | 1.79 | a |
| 9 | 241.93 | 485.78 | 161 | 40 | 25 | 118 | 1.67 | b |
| 10 | 295.16 | 592.14 | 222 | 45 | 28 | 135 | 1.73 | a |
| 11 | 338.14 | 678.02 | 77 | 41 | 31 | 147 | 2.33 | a |
| 12 | 352.04 | 705.79 | 415 | 51 | 25 | 110 | 1.87 | a |
| 13 | 510.89 | 1023.22 | 167 | 40 | 25 | 96 | 2.58 | a |
| 14 | 583.15 | 1167.61 | 130 | 40 | 28 | 105 | 3.21 | a |
| 15 | 609.77 | 1220.81 | 331 | 50 | 28 | 128 | 2.60 | a |
| 16 | 911.18 | 1823.09 | 134 | 37 | 24 | 65 | 4.34 | a |
| 17 | 969.59 | 1939.81 | 18 | 23 | 17 | 63 | 1.54 | a |
| 18 | 1120.96 | 2242.28 | 57 | 27 | 19 | 55 | 2.67 | a |
| 19 | 1460.34 | 2920.43 | 645 | 56 | 20 | 39 | 5.44 | a HiResid |
| 20 | 1764.54 | 3528.30 | 50 | 23 | 15 | 20 | 6.55 | a |

041048D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.24 | 57 | 49 | 39 | 27 | 50 | 40 | NET<CL |
| 2 | 63.41 | 54 | 40 | 31 | 30 | 41 | 32 | NET<CL |
| 3 | 74.76 | 189 | 45 | 29 | 159 | 46 | 32 | |
| 4 | 77.02 | 341 | 57 | 36 | 307 | 58 | 38 | |
| 5 | 86.94 | 68 | 35 | 25 | 54 | 36 | 27 | |
| 6 | 92.92 | 173 | 51 | 36 | 118 | 52 | 38 | |
| 7 | 185.91 | 186 | 42 | 27 | 141 | 43 | 30 | |
| 8 | 238.71 | 419 | 53 | 27 | 391 | 53 | 29 | |
| 9 | 241.93 | 161 | 40 | 25 | 135 | 41 | 27 | |
| 10 | 295.16 | 222 | 45 | 28 | 169 | 46 | 31 | |
| 11 | 338.14 | 77 | 41 | 31 | 74 | 42 | 31 | |
| 12 | 352.04 | 415 | 51 | 25 | 320 | 52 | 31 | |
| 13 | 510.89 | 167 | 40 | 25 | 18 | 41 | 33 | NET<CL |
| 14 | 583.15 | 130 | 40 | 28 | 118 | 41 | 29 | |
| 15 | 609.77 | 331 | 50 | 28 | 226 | 51 | 34 | |
| 16 | 911.18 | 134 | 37 | 24 | 125 | 38 | 25 | |
| 18 | 1120.96 | 57 | 27 | 19 | 34 | 28 | 21 | |
| 19 | 1460.34 | 645 | 56 | 20 | 601 | 57 | 23 | |
| 20 | 1764.54 | 50 | 23 | 15 | 29 | 24 | 18 | |

041048D10.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-11D GS040601-6

Code: 041048D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 06/27/2004 18:21:07 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time. | 1.28e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.02e+002 g | Real Time | 1810 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041048D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10) (Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004
Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV-----
Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E (pCi/g) | Concentration |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|---------------|-----------|-----------|----------------|----------------|
| Th-234 | | 92.50 | 2.88E+00 | +- 1.26E+00 | 1.94E+00 | 9.39E-01 | 3.92E+13 | |
| U-235 | | 143.76 | N-4.26E-02 | +- 3.87E-01 | 6.69E-01 | 3.20E-01 | 6.17E+12 | |
| | | 185.72 | I.D. | | | | 6.17E+12 | |
| Pb-212 | | 238.63 | 1.34E+00 | +- 1.83E-01 | 2.11E-01 | 1.01E-01 | 1.67E+04 | |
| Pb-214 | Average:x | 1.61E+00 | +- 2.24E-01 | | | | 1.40E+07 | |
| | | 295.22 | 1.48E+00 | +- 4.01E-01 | 5.66E-01 | 2.71E-01 | 1.40E+07 | |
| | | 351.99 | 1.67E+00 | +- 2.70E-01 | 3.35E-01 | 1.60E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 1.29E+00 | +- 3.78E-01 | | | | 5.04E+04 | |
| | | 338.40 | 1.25E+00 | +- 7.08E-01 | 1.11E+00 | 5.31E-01 | 5.04E+04 | |
| | | 911.07 | 2.07E+00 | +- 6.24E-01 | 8.72E-01 | 4.14E-01 | 5.04E+04 | |
| | | 968.90 | 4.98E-01 | +- 6.41E-01 | 1.06E+00 | 4.90E-01 | 5.04E+04 | |
| Tl-208 | | 583.14 | 4.06E-01 | +- 1.41E-01 | 2.07E-01 | 9.87E-02 | 1.27E+14 | |
| Bi-214 | Average:x | 1.44E+00 | +- 3.17E-01 | | | | 1.40E+07 | |
| | | 609.32 | 1.48E+00 | +- 3.37E-01 | 4.68E-01 | 2.25E-01 | 1.40E+07 | |
| | | 1120.28 | 1.11E+00 | +- 9.30E-01 | 1.48E+00 | 6.98E-01 | 1.40E+07 | |
| K-40 | | 1460.75 | 3.36E+01 | +- 3.16E+00 | 2.76E+00 | 1.30E+00 | 1.12E+13 | |
| Am-241 | | 59.54 | N 9.66E-02 | +- 2.15E-01 | 3.60E-01B | 1.73E-01 | 3.80E+06 | |
| Eu-155 | | 105.31 | N 6.10E-03 | +- 2.09E-01 | 3.59E-01 | 1.71E-01 | 4.35E+04 | |
| Co-57 | | 122.07 | N 3.22E-03 | +- 5.37E-02 | 9.24E-02 | 4.40E-02 | 6.48E+03 | |
| Ce-144 | | 133.53 | N 2.30E-01 | +- 4.26E-01 | 7.11E-01 | 3.39E-01 | 6.82E+03 | |
| Ce-139 | | 165.85 | N-1.70E-03 | +- 6.63E-02 | 1.14E-01 | 5.46E-02 | 3.30E+03 | |
| Th-227 | | 236.00 | N-1.46E+00 | +- 6.44E-01 | 1.25E+00R | 6.09E-01 | 1.90E+05 | |
| Cr-51 | | 320.07 | N-1.29E+00 | +- 1.98E+00 | 3.59E+00 | 1.70E+00 | 6.65E+02 | |
| I-131 | | 364.48 | N 2.02E+00 | +- 6.53E+00 | 1.11E+01 | 5.24E+00 | 1.93E+02 | |

041048D10.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| Sb-125 | 427.95 | N | 1.18E-01 | +- 1.88E-01 | 3.13E-01 | 1.46E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 4.71E-01 | +- 1.16E+00 | 1.97E+00 | 9.23E-01 | 1.28E+03 |
| Sb-124 | 602.71 | N | 8.91E-01 | +- 3.73E-01 | 2.70E+00P | 1.34E+00 | 1.44E+03 |
| Cs-134 | 604.66 | N | 7.25E-01 | +- 9.36E-01 | 1.54E+00P | 7.66E-01 | 1.81E+04 |
| Ru-106 | 621.84 | N | 5.77E-02 | +- 9.56E-01 | 1.67E+00 | 7.90E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 7.24E-02 | +- 1.15E-01 | 2.08E-01 | 9.85E-02 | 6.00E+03 |
| Cs-137 | 661.62 | N | 4.67E-02 | +- 1.08E-01 | 1.82E-01 | 8.61E-02 | 2.64E+05 |
| Nb-94 | 702.50 | N | 2.60E-02 | +- 1.02E-01 | 1.74E-01 | 8.23E-02 | 1.78E+08 |
| Bi-212 | 727.17 | N | 1.93E+00 | +- 1.48E+00 | 2.34E+00 | 1.09E+00 | 1.67E+04 |
| Nb-95 | 765.82 | N | 1.60E-01 | +- 1.86E-01 | 3.04E-01 | 1.43E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 2.16E-01 | +- 1.79E-01 | 3.37E-01 | 1.60E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 9.42E-02 | +- 1.20E-01 | 2.21E-01 | 1.05E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N | 4.47E-02 | +- 1.64E-01 | 2.93E-01 | 1.38E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 4.79E+00 | +- 2.05E+01 | 3.63E+01 | 1.71E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 8.93E-02 | +- 6.62E-01 | 1.17E+00 | 5.50E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 1.96E-02 | +- 5.14E-01 | 9.02E-01 | 4.24E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 3.49E-01 | +- 4.82E-01 | 7.96E-01P | 3.82E-01 | 5.85E+03 |
| Co-56 | 1238.28 | N | 6.65E-01 | +- 4.00E-01 | 6.19E-01 | 2.92E-01 | 1.86E+03 |
| Na-22 | 1274.54 | N | 1.38E-02 | +- 1.50E-01 | 2.64E-01 | 1.24E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N | 1.05E-01 | +- 1.45E-01 | 2.41E-01 | 1.13E-01 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 2.67E-01 | +- 6.73E-01 | 1.15E+00 | 5.34E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 4.65E-02 | +- 1.32E-01 | 2.28E-01 | 1.04E-01 | 6.31E+09 |

MEASURED TOTAL: 5.07E+01 +- 1.95E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (kev) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.24 | 94.74 | 27 | 50 | 40 | 246 | 1.64 | Deleted |
| 2 | 63.41 | 129.05 | 30 | 41 | 32 | 197 | 1.01 | Deleted |
| 3 | 74.76 | 151.73 | 159 | 46 | 32 | 177 | 1.01 | Unknown |
| 4 | 77.02 | 156.26 | 307 | 58 | 38 | 236 | 1.33 | Unknown |
| 5 | 86.94 | 176.08 | 54 | 36 | 27 | 146 | 0.85 | Unknown |
| 9 | 241.93 | 485.78 | 135 | 41 | 27 | 118 | 1.67 | Unknown |
| 13 | 510.89 | 1023.22 | 18 | 41 | 33 | 96 | 2.58 | Deleted |
| 20 | 1764.54 | 3528.30 | 29 | 24 | 18 | 20 | 6.55 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-12 GS040601-6

Code: 041059D07A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 07/01/2004 15:36:12 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time | 1.37E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.18E+002 g | Real Time | 60194 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041059D07.SPC |

Detector #: 7 (Detector 7)
 Energy(keV) = -2.03 + 0.500*Ch + 5.21E-07*Ch^2 +-8.19E-11*Ch^3 07/01/2004
 FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.45 | 96.92 | 2056 | 138 | 86 | 1643 | 0.72 | a |
| 2 | 49.99 | 104.00 | 32 | 87 | 71 | 1233 | 0.42 | b NET< CL |
| 3 | 53.22 | 110.46 | 199 | 126 | 101 | 2054 | 0.88 | c |
| 4 | 63.23 | 130.46 | 1717 | 155 | 107 | 2323 | 0.88 | a |
| 5 | 66.73 | 137.45 | 228 | 152 | 123 | 2787 | 0.94 | b |
| 6 | 72.76 | 149.52 | 388 | 162 | 129 | 2855 | 1.13 | a HiResid |
| 7 | 74.80 | 153.58 | 3004 | 176 | 113 | 2355 | 1.00 | b HiResid |
| 8 | 77.08 | 158.15 | 4663 | 191 | 110 | 2230 | 0.96 | c HiResid |
| 9 | 80.98 | 165.94 | 312 | 118 | 93 | 1744 | 0.82 | d HiResid |
| 10 | 84.03 | 172.04 | 1035 | 171 | 130 | 2693 | 1.32 | e HiResid |
| 11 | 87.16 | 178.29 | 1573 | 161 | 115 | 2254 | 1.17 | f HiResid |
| 12 | 89.87 | 183.69 | 927 | 136 | 100 | 1857 | 1.00 | g HiResid |
| 13 | 92.69 | 189.34 | 2860 | 183 | 122 | 2368 | 1.25 | h HiResid |
| 14 | 94.62 | 193.20 | 157 | 105 | 84 | 1419 | 0.75 | i HiResid |
| 15 | 98.82 | 201.60 | 170 | 133 | 107 | 1948 | 1.08 | a |
| 16 | 105.28 | 214.49 | 236 | 131 | 105 | 1873 | 1.07 | a |
| 17 | 109.05 | 222.03 | 72 | 86 | 69 | 1070 | 0.67 | b |
| 18 | 125.59 | 255.09 | 81 | 96 | 77 | 1202 | 0.88 | a |
| 19 | 128.96 | 261.82 | 248 | 99 | 77 | 1202 | 0.79 | b |
| 20 | 139.98 | 283.84 | 126 | 96 | 77 | 1200 | 0.85 | a |
| 21 | 143.56 | 290.99 | 294 | 100 | 77 | 1200 | 0.86 | b |
| 22 | 154.16 | 312.16 | 114 | 96 | 77 | 1186 | 0.80 | a |
| 23 | 163.38 | 330.59 | 90 | 65 | 51 | 653 | 0.48 | a |
| 24 | 185.80 | 375.39 | 1523 | 127 | 82 | 1242 | 0.98 | a HiResid |

041059D07.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 25 | 198.49 | 400.73 | 135 | 122 | 99 | 1540 | 1.25 | a |
| 26 | 205.28 | 414.29 | 148 | 197 | 161 | 2730 | 2.37 | a NET< CL Wide Pk |
| 27 | 209.21 | 422.14 | 386 | 101 | 77 | 1092 | 1.06 | b |
| 28 | 235.95 | 475.57 | 152 | 103 | 82 | 1152 | 1.09 | a |
| 29 | 238.50 | 480.65 | 3589 | 149 | 73 | 987 | 1.01 | b |
| 30 | 241.61 | 486.87 | 1165 | 121 | 82 | 1152 | 1.22 | c |
| 31 | 258.38 | 520.37 | 58 | 54 | 43 | 452 | 0.52 | a |
| 32 | 270.01 | 543.59 | 418 | 118 | 91 | 1229 | 1.54 | a |
| 33 | 277.42 | 558.38 | 66 | 53 | 41 | 423 | 0.53 | a |
| 34 | 295.07 | 593.63 | 1913 | 117 | 64 | 748 | 1.06 | a |
| 35 | 299.98 | 603.44 | 215 | 83 | 64 | 748 | 1.02 | b |
| 36 | 302.26 | 608.00 | 37 | 69 | 56 | 623 | 0.81 | c NET< CL |
| 37 | 327.81 | 659.03 | 135 | 72 | 56 | 628 | 0.85 | a |
| 38 | 338.24 | 679.85 | 657 | 88 | 59 | 645 | 0.99 | a |
| 39 | 351.80 | 706.93 | 3333 | 138 | 62 | 659 | 1.16 | a |
| 40 | 356.06 | 715.42 | 67 | 77 | 62 | 659 | 1.20 | b |
| 41 | 379.71 | 762.64 | 35 | 52 | 42 | 387 | 0.58 | a NET< CL |
| 42 | 409.40 | 821.94 | 75 | 64 | 50 | 537 | 0.92 | a |
| 43 | 462.87 | 928.67 | 241 | 75 | 56 | 574 | 1.36 | a |
| 44 | 510.82 | 1024.38 | 1531 | 139 | 95 | 1106 | 2.56 | a Wide Pk |
| 45 | 558.41 | 1119.37 | 125 | 57 | 43 | 390 | 1.02 | a |
| 46 | 569.83 | 1142.17 | 77 | 53 | 41 | 352 | 1.00 | a |
| 47 | 583.19 | 1168.82 | 928 | 83 | 47 | 431 | 1.21 | a |
| 48 | 609.34 | 1221.01 | 2272 | 116 | 55 | 554 | 1.31 | a |
| 49 | 637.66 | 1277.51 | 33 | 55 | 44 | 381 | 1.07 | a NET< CL |
| 50 | 661.63 | 1325.36 | 333 | 66 | 45 | 398 | 1.09 | a |
| 51 | 727.26 | 1456.29 | 190 | 70 | 52 | 453 | 1.68 | a |
| 52 | 768.29 | 1538.16 | 141 | 59 | 45 | 372 | 1.38 | a |
| 53 | 794.97 | 1591.39 | 46 | 39 | 30 | 222 | 0.80 | a |
| 54 | 803.02 | 1607.46 | 144 | 61 | 46 | 397 | 1.59 | a |
| 55 | 816.41 | 1634.16 | 27 | 43 | 34 | 258 | 1.20 | a NET< CL |
| 56 | 860.61 | 1722.34 | 64 | 46 | 35 | 270 | 1.21 | a |
| 57 | 898.73 | 1798.40 | 37 | 47 | 37 | 282 | 1.34 | a NET< CL |
| 58 | 911.13 | 1823.13 | 655 | 72 | 42 | 347 | 1.53 | a |
| 59 | 934.17 | 1869.09 | 107 | 67 | 52 | 437 | 2.14 | a |
| 60 | 949.88 | 1900.44 | 44 | 42 | 33 | 239 | 1.18 | a |
| 61 | 964.73 | 1930.05 | 119 | 59 | 45 | 378 | 1.65 | a |
| 62 | 968.88 | 1938.34 | 346 | 60 | 38 | 302 | 1.32 | b |
| 63 | 981.40 | 1963.30 | 29 | 45 | 36 | 262 | 1.26 | a NET< CL |
| 64 | 1001.18 | 2002.77 | 54 | 43 | 33 | 239 | 1.20 | a |
| 65 | 1120.30 | 2240.39 | 421 | 62 | 39 | 308 | 1.38 | a |
| 66 | 1238.05 | 2475.28 | 181 | 68 | 51 | 482 | 2.03 | a |
| 67 | 1377.55 | 2753.59 | 93 | 39 | 28 | 147 | 1.73 | a |
| 68 | 1407.95 | 2814.23 | 39 | 29 | 22 | 110 | 1.18 | a |
| 69 | 1460.50 | 2919.09 | 5948 | 158 | 29 | 145 | 2.09 | a |
| 70 | 1509.26 | 3016.39 | 44 | 33 | 25 | 114 | 1.98 | a |
| 71 | 1659.78 | 3316.82 | 31 | 29 | 22 | 83 | 2.19 | a |
| 72 | 1729.31 | 3455.61 | 68 | 31 | 22 | 91 | 1.78 | a |

041059D07.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 73 | 1763.80 | 3524.49 | 289 | 42 | 20 | 74 | 2.03 | a |
| 74 | 1846.95 | 3690.53 | 33 | 24 | 17 | 58 | 1.72 | a |

041059D07.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.45 | 2056 | 138 | 86 | 1546 | 214 | 163 | |
| 3 | 53.22 | 199 | 126 | 101 | 142 | 173 | 141 | |
| 4 | 63.23 | 1717 | 155 | 107 | 1321 | 225 | 175 | |
| 5 | 66.73 | 228 | 152 | 123 | 67 | 215 | 177 | NET<CL |
| 7 | 74.80 | 3004 | 176 | 113 | 2897 | 217 | 155 | |
| 8 | 77.08 | 4663 | 191 | 110 | 4574 | 229 | 152 | |
| 10 | 84.03 | 1035 | 171 | 130 | 946 | 233 | 185 | |
| 13 | 92.69 | 2860 | 183 | 122 | 2329 | 242 | 183 | |
| 19 | 128.96 | 248 | 99 | 77 | 217 | 132 | 106 | |
| 20 | 139.98 | 126 | 96 | 77 | -12 | 198 | 163 | NET<CL |
| 21 | 143.56 | 294 | 100 | 77 | 175 | 213 | 174 | |
| 24 | 185.80 | 1523 | 127 | 82 | 1263 | 184 | 139 | |
| 25 | 198.49 | 135 | 122 | 99 | 9 | 181 | 149 | NET<CL |
| 29 | 238.50 | 3589 | 149 | 73 | 3351 | 194 | 128 | |
| 32 | 270.01 | 418 | 118 | 91 | 406 | 139 | 110 | |
| 38 | 338.24 | 657 | 88 | 59 | 609 | 154 | 120 | |
| 39 | 351.80 | 3333 | 138 | 62 | 3270 | 162 | 94 | |
| 44 | 510.82 | 1531 | 139 | 95 | 392 | 267 | 218 | |
| 45 | 558.41 | 125 | 57 | 43 | -4 | 112 | 92 | NET<CL |
| 46 | 569.83 | 77 | 53 | 41 | 9 | 94 | 77 | NET<CL |
| 47 | 583.19 | 928 | 83 | 47 | 884 | 112 | 78 | |
| 48 | 609.34 | 2272 | 116 | 55 | 2194 | 147 | 93 | |
| 54 | 803.02 | 144 | 61 | 46 | 69 | 92 | 74 | NET<CL |
| 58 | 911.13 | 655 | 72 | 42 | 592 | 108 | 79 | |
| 62 | 968.88 | 346 | 60 | 38 | 308 | 94 | 71 | |
| 69 | 1460.50 | 5948 | 158 | 29 | 5823 | 172 | 66 | |

041059D07.SPC Analyzed by

SEEKER

F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-12 GS040601-6

Code: 041059D07A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 07/01/2004 15:36:12 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time | 1.37e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.18e+002 g | Real Time | 60194 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041059D07.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 7 (Detector 7)

Efficiency File: (D07) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | | N | ENERGY (keV) | E (pCi/g) | Concentration) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------|--------------|-----------|-----------------|----------|----------------|----------------|
| Th-234 | Average:x | 2.25E+00 | +- 2.00E-01 | | | 5.38E-01 | 2.67E-01 | 3.92E+13 |
| | 63.29 | 2.01E+00 | +- 3.43E-01 | | | 3.75E-01 | 1.86E-01 | 3.92E+13 |
| | 92.50 | 2.37E+00 | +- 2.47E-01 | | | 5.93E-02 | 2.93E-02 | 4.35E+04 |
| Eu-155 | 105.31 | 6.61E-02 | +- 3.66E-02 | | | 2.14E-01 | 1.06E-01 | 6.17E+12 |
| U-235 | Average:x | 1.21E-01 | +- 7.60E-02 | | | 1.51E-01 | 7.37E-02 | 6.17E+12 |
| | 143.76 | 1.07E-01 | +- 1.30E-01 | | | 8.29E-02 | 4.17E-02 | 6.17E+12 |
| | 163.35 | 1.28E-01 | +- 9.36E-02 | | | 1.85E-02 | I.D. | 6.17E+12 |
| Th-227 | 236.00 | 1.20E-01 | +- 8.13E-02 | | | 1.32E-01 | 6.50E-02 | 1.90E+05 |
| Pb-212 | Average:x | 8.01E-01 | +- 4.57E-02 | | | 6.16E-02 | 3.05E-02 | 1.67E+04 |
| | 238.63 | 8.00E-01 | +- 4.62E-02 | | | 5.02E-01 | 2.46E-01 | 1.67E+04 |
| | 300.09 | 8.29E-01 | +- 3.19E-01 | | | 2.77E-01 | 1.38E-01 | 1.67E+04 |
| Tl-208 | Average:x | 2.18E-01 | +- 2.73E-02 | | | 1.51E-01 | 7.30E-02 | 1.27E+14 |
| | 277.36 | 1.17E-01 | +- 9.33E-02 | | | 4.17E-02 | 2.05E-02 | 1.27E+14 |
| | 583.14 | 2.31E-01 | +- 2.94E-02 | | | 8.60E-02 | 4.17E-02 | 1.27E+14 |
| | 860.47 | 1.65E-01 | +- 1.18E-01 | | | 1.88E-01 | 9.07E-02 | 1.27E+14 |
| Pb-214 | Average:x | 1.20E+00 | +- 4.60E-02 | | | 7.96E-02 | 3.89E-02 | 1.40E+07 |
| | 295.22 | 1.17E+00 | +- 7.15E-02 | | | 7.12E-02 | 3.51E-02 | 1.40E+07 |
| | 351.99 | 1.21E+00 | +- 6.02E-02 | | | 2.91E-01 | 1.44E-01 | 5.04E+04 |
| Ra-228 | Average:x | 7.56E-01 | +- 1.01E-01 | | | 2.15E-01 | 1.06E-01 | 5.04E+04 |
| | 338.40 | 7.32E-01 | +- 1.84E-01 | | | 3.36E-01 | 1.65E-01 | 5.04E+04 |
| | 911.07 | 7.89E-01 | +- 1.44E-01 | | | 9.44E-02 | 4.65E-02 | 1.40E+07 |
| Bi-214 | Average:x | 1.10E+00 | +- 6.74E-02 | | | 609.32 | 1.10E+00 | +- 7.34E-02 |

041059D07.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|----------|-------------------|-------------------|
| Cs-137 | 1120.28 | 1.15E+00 | +- 1.70E-01 | 2.19E-01 | 1.06E-01 | 1.40E+07 | |
| Bi-212 | 661.62 | 9.76E-02 | +- 1.93E-02 | 2.72E-02 | 1.32E-02 | 2.64E+05 | |
| Bi-212 | 727.17 | 8.31E-01 | +- 3.05E-01 | 4.72E-01 | 2.30E-01 | 1.67E+04 | |
| Cs-134 | Average:x | 7.10E-03 | +- 1.09E-02 | . | . | . | 1.81E+04 |
| | 795.76 | 1.68E-02 | +- 1.42E-02 | 2.29E-02 | 1.10E-02 | 1.81E+04 | |
| | 604.66 | N-6.91E-03 | +- 1.71E-02 | 2.92E-02B | 1.42E-02 | 1.81E+04 | |
| Pa-234m | 1001.03 | 3.35E+00 | +- 2.68E+00 | 4.32E+00 | 2.08E+00 | 3.92E+13 | |
| Co-56 | 1238.28 | 2.03E-01 | +- 7.59E-02 | 1.18E-01 | 5.73E-02 | 1.86E+03 | |
| Eu-152 | 1408.08 | 9.63E-02 | +- 7.19E-02 | 1.14E-01 | 5.35E-02 | 1.17E+05 | |
| K-40 | 1460.75 | 2.81E+01 | +- 8.31E-01 | 6.46E-01 | 3.16E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N 3.60E-02 | +- 2.11E-02 | 3.42E-02B | 1.68E-02 | 3.80E+06 | |
| Co-57 | 122.07 | N-3.74E-03 | +- 9.05E-03 | 1.52E-02B | 7.50E-03 | 6.48E+03 | |
| Ce-144 | 133.53 | N-4.33E-02 | +- 7.09E-02 | 1.20E-01 | 5.90E-02 | 6.82E+03 | |
| Ce-139 | 165.85 | N 4.64E-03 | +- 1.23E-02 | 2.05E-02b | 1.01E-02 | 3.30E+03 | |
| Cr-51 | 320.07 | N 4.53E-02 | +- 4.35E-01 | 7.28E-01 | 3.57E-01 | 6.65E+02 | |
| I-131 | 364.48 | N-2.88E-01 | +- 1.91E+00 | 3.23E+00 | 1.58E+00 | 1.93E+02 | |
| Sb-125 | 427.95 | N-1.35E-02 | +- 3.72E-02 | 6.35E-02 | 3.10E-02 | 2.43E+04 | |
| Be-7 | 477.56 | N 9.53E-02 | +- 2.54E-01 | 4.24E-01 | 2.07E-01 | 1.28E+03 | |
| Sb-124 | 602.71 | N-4.49E-03 | +- 3.12E-02 | 5.27E-02 | 2.58E-02 | 1.44E+03 | |
| Ru-106 | 621.84 | N 1.23E-01 | +- 1.64E-01 | 2.70E-01 | 1.31E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N 1.22E-02 | +- 1.92E-02 | 3.18E-02B | 1.55E-02 | 6.00E+03 | |
| Nb-94 | 702.50 | N 6.06E-03 | +- 1.80E-02 | 3.01E-02 | 1.47E-02 | 1.78E+08 | |
| Nb-95 | 765.82 | N-5.33E-03 | +- 4.98E-02 | 8.38E-02R | 4.12E-02 | 1.54E+03 | |
| Co-58 | 810.75 | N-1.54E-02 | +- 2.74E-02 | 4.75E-02 | 2.30E-02 | 1.70E+03 | |
| Mn-54 | 834.81 | N-8.93E-03 | +- 1.94E-02 | 3.34E-02 | 1.62E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N 1.54E-02 | +- 2.86E-02 | 4.75E-02 | 2.30E-02 | 2.01E+03 | |
| Eu-154 | 1004.80 | N 8.13E-02 | +- 1.58E-01 | 2.58E-01r | 1.26E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 2.72E-02 | +- 9.70E-02 | 1.63E-01 | 7.90E-02 | 1.08E+03 | |
| Zn-65 | 1115.52 | N 1.78E-02 | +- 5.43E-02 | 9.09E-02B | 4.42E-02 | 5.85E+03 | |
| Na-22 | 1274.54 | N-4.86E-04 | +- 2.55E-02 | 4.33E-02 | 2.10E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N-1.34E-02 | +- 2.14E-02 | 3.75E-02 | 1.81E-02 | 4.62E+04 | |
| Al-26 | 1808.65 | N 1.31E-03 | +- 1.62E-02 | 2.82E-02 | 1.32E-02 | 6.31E+09 | |

MEASURED TOTAL: 3.98E+01 +- 5.96E+00 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|----------------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.45 | 96.92 Pb -210 | 1546 | 214 | 163 | 1643 | 0.72 | Unknown |
| 2 | 49.99 | 104.00 | 32 | 87 | 71 | 1233 | 0.42 | Deleted |
| 3 | 53.22 | 110.46 | 142 | 173 | 141 | 2054 | 0.88 | Unknown |
| 5 | 66.73 | 137.45 | 67 | 215 | 177 | 2787 | 0.94 | Deleted |
| 6 | 72.76 | 149.52 | 388 | 162 | 129 | 2855 | 1.13 | Unknown |
| 7 | 74.80 | 153.58 Pb -XRAY | 2897 | 217 | 155 | 2355 | 1.00 | Unknown |
| 8 | 77.08 | 158.15 | 4574 | 229 | 152 | 2230 | 0.96 | Unknown |
| 9 | 80.98 | 165.94 | 312 | 118 | 93 | 1744 | 0.82 | Unknown |

041059D07.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 10 | 84.03 | 172.04 Pb-XRAY | 946 | 233 | 185 | 2693 | 1.32 | Unknown |
| 11 | 87.16 | 178.29 | 1573 | 161 | 115 | 2254 | 1.17 | Unknown |
| 12 | 89.87 | 183.69 | 927 | 136 | 100 | 1857 | 1.00 | Unknown |
| 14 | 94.62 | 193.20 | 157 | 105 | 84 | 1419 | 0.75 | Unknown |
| 15 | 98.82 | 201.60 | 170 | 133 | 107 | 1948 | 1.08 | 1120DEsc |
| 17 | 109.05 | 222.03 | 72 | 86 | 69 | 1070 | 0.67 | Unknown |
| 18 | 125.59 | 255.09 | 81 | 96 | 77 | 1202 | 0.88 | Unknown |
| 19 | 128.96 | 261.82 | 217 | 132 | 106 | 1202 | 0.79 | Unknown |
| 20 | 139.98 | 283.84 | -12 | 198 | 163 | 1200 | 0.85 | Deleted |
| 22 | 154.16 | 312.16 | 114 | 96 | 77 | 1186 | 0.80 | Unknown |
| 25 | 198.49 | 400.73 | 9 | 181 | 149 | 1540 | 1.25 | Deleted |
| 26 | 205.28 | 414.29 | 148 | 197 | 161 | 2730 | 2.37 | Deleted |
| 27 | 209.21 | 422.14 Ac-228 | 386 | 101 | 77 | 1092 | 1.06 | Unknown |
| 30 | 241.61 | 486.87 Pb-Z14 | 1165 | 121 | 82 | 1152 | 1.22 | Unknown |
| 31 | 258.38 | 520.37 | 58 | 54 | 43 | 452 | 0.52 | Unknown |
| 32 | 270.01 | 543.59 | 406 | 139 | 110 | 1229 | 1.54 | Unknown |
| 36 | 302.26 | 608.00 | 37 | 69 | 56 | 623 | 0.81 | Deleted |
| 37 | 327.81 | 659.03 | 135 | 72 | 56 | 628 | 0.85 | Unknown |
| 40 | 356.06 | 715.42 | 67 | 77 | 62 | 659 | 1.20 | Unknown |
| 41 | 379.71 | 762.64 | 35 | 52 | 42 | 387 | 0.58 | Deleted |
| 42 | 409.40 | 821.94 | 75 | 64 | 50 | 537 | 0.92 | Unknown |
| 43 | 462.87 | 928.67 | 241 | 75 | 56 | 574 | 1.36 | Unknown |
| 44 | 510.82 | 1024.38 | 392 | 267 | 218 | 1106 | 2.56 | Unknown |
| 45 | 558.41 | 1119.37 | -4 | 112 | 92 | 390 | 1.02 | Deleted |
| 46 | 569.83 | 1142.17 | 9 | 94 | 77 | 352 | 1.00 | Deleted |
| 49 | 637.66 | 1277.51 | 33 | 55 | 44 | 381 | 1.07 | Deleted |
| 52 | 768.29 | 1538.16 | 141 | 60 | 45 | 372 | 1.38 | Unknown |
| 54 | 803.02 | 1607.46 | 69 | 92 | 74 | 397 | 1.59 | Deleted |
| 55 | 816.41 | 1634.16 | 27 | 43 | 34 | 258 | 1.20 | Deleted |
| 57 | 898.73 | 1798.40 | 37 | 47 | 37 | 282 | 1.34 | Deleted |
| 59 | 934.17 | 1869.09 | 107 | 67 | 52 | 437 | 2.14 | Unknown |
| 60 | 949.88 | 1900.44 | 44 | 42 | 33 | 239 | 1.18 | 1460SEsc |
| 61 | 964.73 | 1930.05 | 119 | 59 | 45 | 378 | 1.65 | Unknown |
| 63 | 981.40 | 1963.30 | 29 | 45 | 36 | 262 | 1.26 | Deleted |
| 67 | 1377.55 | 2753.59 | 93 | 39 | 28 | 147 | 1.73 | Unknown |
| 70 | 1509.26 | 3016.39 | 44 | 33 | 25 | 114 | 1.98 | Unknown |
| 71 | 1659.78 | 3316.82 | 31 | 29 | 22 | 83 | 2.19 | Unknown |
| 72 | 1729.31 | 3455.61 | 68 | 31 | 22 | 91 | 1.78 | Unknown |
| 73 | 1763.80 | 3524.49 Bi-Z14 | 289 | 42 | 20 | 74 | 2.03 | Unknown |
| 74 | 1846.95 | 3690.53 | 33 | 24 | 17 | 58 | 1.72 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S P S Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-12D GS040601-6

Code: 041131D03A

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 07/01/2004 16:07:14 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time. | 1.37E+003 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 60000 Sec |
| Sample Size . | 1.05E+002 g | Real Time . | 60085 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 041131D03.SPC |

Detector #: 3 (Detector 3)
 Energy(keV) = -0.82 + 0.500*Ch + 1.08E-07*Ch^2 + -1.09E-11*Ch^3 07/01/2004
 FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 46.31 | 94.24 | 179 | 167 | 135 | 2702 | 1.42 | a Wide Pk |
| 2 | 63.30 | 128.22 | 529 | 129 | 99 | 1811 | 0.97 | a HiResid Wide Pk |
| 3 | 66.45 | 134.52 | 283 | 168 | 136 | 2716 | 1.43 | b HiResid |
| 4 | 71.51 | 144.64 | 444 | 284 | 231 | 5131 | 2.73 | c HiResid |
| 5 | 74.79 | 151.19 | 1409 | 168 | 123 | 2415 | 1.35 | d HiResid |
| 6 | 76.98 | 155.57 | 963 | 162 | 123 | 2415 | 1.30 | e HiResid |
| 7 | 77.15 | 155.91 | 908 | 121 | 87 | 1509 | 0.80 | f HiResid |
| 8 | 84.01 | 169.63 | 533 | 171 | 136 | 2716 | 1.41 | g HiResid |
| 9 | 87.21 | 176.02 | 683 | 145 | 111 | 2113 | 1.14 | h HiResid |
| 10 | 89.89 | 181.38 | 483 | 156 | 123 | 2415 | 1.24 | i HiResid |
| 11 | 92.71 | 187.03 | 1848 | 173 | 123 | 2415 | 1.38 | j HiResid |
| 12 | 98.60 | 198.79 | 153 | 139 | 113 | 2019 | 1.26 | a |
| 13 | 99.83 | 201.25 | 94 | 84 | 67 | 1009 | 0.67 | b |
| 14 | 104.69 | 210.99 | 123 | 137 | 111 | 1967 | 1.34 | a |
| 15 | 112.87 | 227.33 | 86 | 84 | 67 | 1003 | 0.68 | a |
| 16 | 120.61 | 242.82 | 59 | 95 | 77 | 1192 | 0.77 | a NET< CL |
| 17 | 124.90 | 251.40 | 76 | 68 | 54 | 715 | 0.51 | b |
| 18 | 129.18 | 259.94 | 146 | 97 | 77 | 1192 | 0.84 | c |
| 19 | 139.68 | 280.93 | 156 | 96 | 76 | 1167 | 0.85 | a |
| 20 | 143.79 | 289.16 | 218 | 110 | 87 | 1400 | 0.91 | b |
| 21 | 154.02 | 309.61 | 74 | 117 | 95 | 1540 | 1.20 | a NET< CL |
| 22 | 185.96 | 373.47 | 1540 | 138 | 94 | 1497 | 1.17 | a |
| 23 | 198.63 | 398.81 | 167 | 77 | 60 | 798 | 0.69 | a |

041131D03.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 24 | 209.30 | 420.14 | 276 | 133 | 106 | 1649 | 1.51 | a |
| 25 | 238.72 | 478.94 | 2873 | 150 | 86 | 1264 | 1.13 | a |
| 26 | 241.79 | 485.08 | 1031 | 133 | 95 | 1444 | 1.35 | b |
| 27 | 270.28 | 542.05 | 320 | 119 | 93 | 1425 | 1.71 | a |
| 28 | 277.43 | 556.35 | 117 | 81 | 64 | 873 | 1.04 | a |
| 29 | 295.24 | 591.94 | 1797 | 119 | 68 | 922 | 1.20 | a |
| 30 | 300.02 | 601.51 | 174 | 79 | 61 | 791 | 1.04 | b |
| 31 | 317.14 | 635.73 | 47 | 65 | 52 | 622 | 0.84 | a NET< CL |
| 32 | 328.08 | 657.61 | 93 | 75 | 60 | 748 | 0.95 | a |
| 33 | 338.24 | 677.90 | 605 | 100 | 72 | 947 | 1.27 | a |
| 34 | 351.85 | 705.12 | 3015 | 142 | 74 | 954 | 1.44 | a |
| 35 | 462.98 | 927.27 | 108 | 62 | 48 | 489 | 1.05 | a |
| 36 | 511.03 | 1023.32 | 1747 | 142 | 95 | 1275 | 2.61 | a Wide Pk |
| 37 | 558.67 | 1118.54 | 116 | 61 | 47 | 473 | 1.12 | a |
| 38 | 583.20 | 1167.57 | 820 | 83 | 50 | 505 | 1.36 | a |
| 39 | 596.63 | 1194.41 | 62 | 55 | 43 | 431 | 1.06 | a |
| 40 | 609.28 | 1219.71 | 2071 | 118 | 62 | 708 | 1.61 | a |
| 41 | 661.70 | 1324.47 | 342 | 75 | 53 | 556 | 1.40 | a |
| 42 | 727.57 | 1456.13 | 170 | 69 | 52 | 503 | 1.65 | a |
| 43 | 768.21 | 1537.36 | 136 | 55 | 41 | 357 | 1.22 | a |
| 44 | 786.14 | 1573.18 | 33 | 81 | 66 | 642 | 2.41 | a NET< CL Wide Pk |
| 45 | 795.05 | 1591.00 | 169 | 84 | 66 | 642 | 2.40 | b |
| 46 | 803.33 | 1607.54 | 140 | 63 | 48 | 428 | 1.63 | c |
| 47 | 803.81 | 1608.50 | 83 | 157 | 128 | 1412 | 5.43 | d NET< CL |
| 48 | 860.62 | 1722.04 | 100 | 55 | 42 | 376 | 1.51 | a |
| 49 | 911.36 | 1823.45 | 591 | 79 | 51 | 487 | 1.94 | a |
| 50 | 934.44 | 1869.57 | 69 | 59 | 47 | 418 | 1.81 | a |
| 51 | 950.15 | 1900.97 | 77 | 62 | 49 | 443 | 1.89 | a |
| 52 | 969.04 | 1938.71 | 314 | 75 | 55 | 533 | 2.05 | a |
| 53 | 1001.51 | 2003.60 | 70 | 44 | 33 | 260 | 1.16 | a |
| 54 | 1120.26 | 2240.91 | 405 | 80 | 57 | 559 | 2.37 | a |
| 55 | 1238.47 | 2477.14 | 81 | 60 | 47 | 444 | 1.67 | a |
| 56 | 1377.55 | 2755.06 | 96 | 48 | 36 | 224 | 2.34 | a |
| 57 | 1460.87 | 2921.55 | 6968 | 174 | 39 | 244 | 2.60 | a HiResid |
| 58 | 1764.58 | 3528.42 | 387 | 52 | 27 | 111 | 3.00 | a |
| 59 | 1848.69 | 3696.49 | 36 | 29 | 22 | 86 | 1.88 | a |

041131D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.31 | 179 | 167 | 135 | 75 | 248 | 204 | NET<CL |
| 2 | 63.30 | 529 | 129 | 99 | 325 | 201 | 162 | |
| 3 | 66.45 | 283 | 168 | 136 | 73 | 270 | 222 | NET<CL |
| 4 | 71.51 | 444 | 284 | 231 | 425 | 301 | 245 | |
| 5 | 74.79 | 1409 | 168 | 123 | 1275 | 225 | 175 | |
| 6 | 76.98 | 963 | 162 | 123 | 842 | 220 | 175 | |
| 8 | 84.01 | 533 | 171 | 136 | 454 | 258 | 210 | |
| 11 | 92.71 | 1848 | 173 | 123 | 1326 | 247 | 194 | |
| 19 | 139.68 | 156 | 96 | 76 | 70 | 148 | 121 | NET<CL |
| 20 | 143.79 | 218 | 110 | 87 | 164 | 183 | 149 | |
| 22 | 185.96 | 1540 | 138 | 94 | 1210 | 210 | 163 | |
| 23 | 198.63 | 167 | 77 | 60 | -46 | 192 | 158 | NET<CL |
| 25 | 238.72 | 2873 | 150 | 86 | 2664 | 202 | 143 | |
| 29 | 295.24 | 1797 | 119 | 68 | 1688 | 202 | 151 | |
| 33 | 338.24 | 605 | 100 | 72 | 543 | 147 | 115 | |
| 34 | 351.85 | 3015 | 142 | 74 | 2831 | 197 | 137 | |
| 36 | 511.03 | 1747 | 142 | 95 | 118 | 278 | 228 | NET<CL |
| 37 | 558.67 | 116 | 61 | 47 | -7 | 112 | 92 | NET<CL |
| 38 | 583.20 | 820 | 83 | 50 | 637 | 149 | 115 | |
| 40 | 609.28 | 2071 | 118 | 62 | 1966 | 171 | 120 | |
| 46 | 803.33 | 140 | 63 | 48 | 32 | 104 | 85 | NET<CL |
| 49 | 911.36 | 591 | 79 | 51 | 510 | 122 | 94 | |
| 53 | 1001.51 | 70 | 44 | 33 | 43 | 79 | 64 | NET<CL |
| 57 | 1460.87 | 6968 | 174 | 39 | 6718 | 195 | 87 | |
| 58 | 1764.58 | 387 | 52 | 27 | 350 | 97 | 74 | |

041131D03.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-12D GS040601-6

Code: 041131D03A

| | | | |
|--------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 07/01/2004 16:07:14 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time. | 1.37e+003 Hrs |
| Buildup Time. | 0.00e+000 Hrs | Live Time . | 60000 Sec |
| Sample Size . | 1.05e+002 g | Real Time . | 60085 Sec |
| Collection Efficiency . | 1.0000 | Spectrum File . | 041131D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | | N | ENERGY | E | Concentration | | Critical | Halflife |
|---------|-----------|------------|--------|----------|---------------|----------|----------|-------------|
| | | | (keV) | T | (pCi/g) |) | MDA | Level (hrs) |
| Th-234 | Average:x | 2.10E+00 | +- | 3.76E-01 | | . | . | 3.92E+13 |
| | 63.29 | 1.79E+00 | +- | 1.10E+00 | 1.80E+00 | 8.93E-01 | 3.92E+13 | |
| | 92.50 | 2.14E+00 | +- | 4.00E-01 | 6.32E-01 | 3.14E-01 | 3.92E+13 | |
| Eu-155 | 105.31 | 4.51E-02 | +- | 5.04E-02 | 8.29E-02 | 4.09E-02 | 4.35E+04 | |
| U-235 | 143.76 | 1.04E-01 | +- | 1.16E-01 | 1.90E-01 | 9.42E-02 | 6.17E+12 | |
| | 185.72 | I.D. | | . | . | . | 6.17E+12 | |
| Pb-212 | Average:x | 6.07E-01 | +- | 4.53E-02 | | . | . | 1.67E+04 |
| | 238.63 | 6.06E-01 | +- | 4.59E-02 | 6.55E-02 | 3.24E-02 | 1.67E+04 | |
| | 300.09 | 6.31E-01 | +- | 2.87E-01 | 4.55E-01 | 2.23E-01 | 1.67E+04 | |
| Tl-208 | Average:x | 1.59E-01 | +- | 3.28E-02 | | . | . | 1.27E+14 |
| | 277.36 | 1.94E-01 | +- | 1.35E-01 | 2.19E-01 | 1.07E-01 | 1.27E+14 | |
| | 583.14 | 1.51E-01 | +- | 3.52E-02 | 5.50E-02 | 2.72E-02 | 1.27E+14 | |
| | 860.47 | 2.27E-01 | +- | 1.25E-01 | 1.97E-01 | 9.56E-02 | 1.27E+14 | |
| Pb-214 | Average:x | 9.81E-01 | +- | 5.90E-02 | | . | . | 1.40E+07 |
| | 295.22 | 9.74E-01 | +- | 1.16E-01 | 1.76E-01 | 8.74E-02 | 1.40E+07 | |
| | 351.99 | 9.83E-01 | +- | 6.85E-02 | 9.58E-02 | 4.74E-02 | 1.40E+07 | |
| Ra-228 | Average:x | 6.13E-01 | +- | 8.83E-02 | | . | . | 5.04E+04 |
| | 338.40 | 6.12E-01 | +- | 1.66E-01 | 2.62E-01 | 1.29E-01 | 5.04E+04 | |
| | 911.07 | 5.97E-01 | +- | 1.43E-01 | 2.22E-01 | 1.10E-01 | 5.04E+04 | |
| | 968.90 | 6.33E-01 | +- | 1.52E-01 | 2.26E-01 | 1.11E-01 | 5.04E+04 | |
| Sb-125 | Average:x | 1.07E-02 | +- | 3.96E-02 | | . | . | 2.43E+04 |
| | 463.51 | 1.75E-01 | +- | 1.01E-01 | 1.61E-01 | 7.81E-02 | 2.43E+04 | |
| | 427.95 | N-1.94E-02 | +- | 4.31E-02 | 7.32E-02 | 3.59E-02 | 2.43E+04 | |
| Bi-214 | Average:x | 8.97E-01 | +- | 7.14E-02 | | . | . | 1.40E+07 |
| | 609.32 | 8.87E-01 | +- | 7.70E-02 | 1.10E-01 | 5.41E-02 | 1.40E+07 | |

041131D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-------------|-----------|-------------------|-------------------|
| Cs-137 | 1120.28 | 9.53E-01 | +- 1.89E-01 | 2.76E-01 | 1.35E-01 | 1.40E+07 | |
| Bi-212 | 661.62 | 9.00E-02 | +- 1.97E-02 | 2.89E-02 | 1.41E-02 | 2.64E+05 | |
| Bi-212 | 727.17 | 6.65E-01 | +- 2.68E-01 | 4.19E-01 | 2.04E-01 | 1.67E+04 | |
| Cs-134 | Average:x | 1.44E-02 | +- 1.50E-02 | . | . | . | 1.81E+04 |
| | 795.76 | 5.49E-02 | +- 2.73E-02 | 4.36E-02 | 2.14E-02 | 1.81E+04 | |
| | 604.66 | N-3.12E-03 | +- 1.80E-02 | 3.03E-02B | 1.48E-02 | 1.81E+04 | |
| Pa-234m | 1001.03 | N | 2.35E+00 | +- 4.30E+00 | 7.13E+00 | 3.49E+00 | 3.92E+13 |
| Co-56 | 1238.28 | 7.75E-02 | +- 5.75E-02 | 9.28E-02 | 4.51E-02 | 1.86E+03 | |
| K-40 | 1460.75 | 2.74E+01 | +- 7.94E-01 | 7.17E-01 | 3.53E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N | 8.89E-02 | +- 8.68E-02 | 1.42E-01B | 7.02E-02 | 3.80E+06 |
| Co-57 | 122.07 | N | 4.99E-03 | +- 1.00E-02 | 1.66E-02B | 8.18E-03 | 6.48E+03 |
| Ce-144 | 133.53 | N | 1.28E-02 | +- 7.60E-02 | 1.27E-01 | 6.23E-02 | 6.82E+03 |
| Ce-139 | 165.85 | N | 8.13E-03 | +- 1.40E-02 | 2.36E-02 | 1.16E-02 | 3.30E+03 |
| Th-227 | 236.00 | N | 2.19E-01 | +- 1.91E+00 | 3.14E+00P | 1.57E+00 | 1.90E+05 |
| Cr-51 | 320.07 | N | 5.41E-01 | +- 4.47E-01 | 7.68E-01 | 3.77E-01 | 6.65E+02 |
| I-131 | 364.48 | N | 1.25E+00 | +- 1.85E+00 | 3.05E+00 | 1.49E+00 | 1.93E+02 |
| Be-7 | 477.56 | N | 9.59E-02 | +- 2.55E-01 | 4.24E-01 | 2.08E-01 | 1.28E+03 |
| Sb-124 | 602.71 | N | 6.50E-03 | +- 3.28E-02 | 5.54E-02B | 2.71E-02 | 1.44E+03 |
| Ru-106 | 621.84 | N | 5.29E-02 | +- 1.74E-01 | 2.95E-01 | 1.44E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 4.44E-03 | +- 2.58E-02 | 4.35E-02R | 2.14E-02 | 6.00E+03 |
| Nb-94 | 702.50 | N | 1.52E-02 | +- 1.90E-02 | 3.13E-02 | 1.53E-02 | 1.78E+08 |
| Nb-95 | 765.82 | N | 4.21E-02 | +- 4.23E-02 | 6.78E-02R | 3.32E-02 | 1.54E+03 |
| Co-58 | 810.75 | N | 2.32E-03 | +- 2.77E-02 | 4.70E-02B | 2.29E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 8.52E-03 | +- 2.05E-02 | 3.50E-02 | 1.71E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 9.80E-03 | +- 2.96E-02 | 5.05E-02 | 2.46E-02 | 2.01E+03 |
| Eu-154 | 1004.80 | N | 1.01E-02 | +- 1.19E-01 | 2.00E-01 | 9.78E-02 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 4.26E-02 | +- 9.66E-02 | 1.65E-01 | 8.05E-02 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 3.97E-02 | +- 8.31E-02 | 1.42E-01R | 6.97E-02 | 5.85E+03 |
| Na-22 | 1274.54 | N | 9.34E-04 | +- 2.61E-02 | 4.40E-02 | 2.15E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 6.02E-03 | +- 2.20E-02 | 3.76E-02 | 1.82E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 4.01E-02 | +- 1.05E-01 | 1.76E-01 | 8.51E-02 | 1.17E+05 |
| Al-26 | 1808.65 | N | 8.14E-04 | +- 1.77E-02 | 3.06E-02 | 1.46E-02 | 6.31E+09 |

MEASURED TOTAL: 3.79E+01 +- 1.07E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.31 | 94.24 | 75 | 248 | 204 | 2702 | 1.42 | Deleted |
| 3 | 66.45 | 134.52 | 73 | 270 | 222 | 2717 | 1.43 | Deleted |
| 4 | 71.51 | 144.64 | 425 | 301 | 245 | 5131 | 2.73 | Unknown |
| 5 | 74.79 | 151.19 | 1275 | 225 | 175 | 2415 | 1.35 | Unknown |
| 6 | 76.98 | 155.57 | 842 | 220 | 175 | 2415 | 1.30 | Unknown |
| 7 | 77.15 | 155.91 | 908 | 121 | 87 | 1509 | 0.80 | Unknown |
| 8 | 84.01 | 169.63 | 454 | 258 | 210 | 2717 | 1.41 | Unknown |
| 9 | 87.21 | 176.02 | 683 | 145 | 111 | 2113 | 1.14 | Unknown |

041131D03.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 10 | 89.89 | 181.38 | 483 | 156 | 123 | 2415 | 1.24 | Unknown |
| 12 | 98.60 | 198.79 | 153 | 139 | 113 | 2019 | 1.26 | 1120DEsc |
| 13 | 99.83 | 201.25 | 94 | 84 | 67 | 1009 | 0.67 | 1120DEsc |
| 15 | 112.87 | 227.33 | 86 | 84 | 67 | 1003 | 0.68 | Unknown |
| 16 | 120.61 | 242.82 | 59 | 95 | 77 | 1192 | 0.77 | Deleted |
| 17 | 124.90 | 251.40 | 76 | 68 | 54 | 715 | 0.51 | Unknown |
| 18 | 129.18 | 259.94 | 146 | 97 | 77 | 1192 | 0.84 | Unknown |
| 19 | 139.68 | 280.93 | 70 | 148 | 121 | 1167 | 0.85 | Deleted |
| 21 | 154.02 | 309.61 | 74 | 117 | 95 | 1540 | 1.20 | Deleted |
| 23 | 198.63 | 398.81 | -46 | 192 | 158 | 798 | 0.69 | Deleted |
| 24 | 209.30 | 420.14 | 276 | 133 | 106 | 1649 | 1.51 | Unknown |
| 26 | 241.79 | 485.08 | 1031 | 133 | 95 | 1444 | 1.35 | Unknown |
| 27 | 270.28 | 542.05 | 320 | 119 | 93 | 1425 | 1.71 | Unknown |
| 31 | 317.14 | 635.73 | 47 | 65 | 52 | 622 | 0.84 | Deleted |
| 32 | 328.08 | 657.60 | 93 | 75 | 60 | 748 | 0.95 | Unknown |
| 36 | 511.03 | 1023.32 | 118 | 278 | 228 | 1275 | 2.61 | Deleted |
| 37 | 558.67 | 1118.54 | -7 | 112 | 92 | 473 | 1.12 | Deleted |
| 39 | 596.63 | 1194.41 | 62 | 55 | 43 | 431 | 1.06 | Unknown |
| 43 | 768.21 | 1537.36 | 136 | 55 | 41 | 357 | 1.22 | Unknown |
| 44 | 786.14 | 1573.18 | 33 | 81 | 66 | 642 | 2.41 | Deleted |
| 46 | 803.33 | 1607.54 | 32 | 104 | 85 | 428 | 1.63 | Deleted |
| 47 | 803.81 | 1608.50 | 83 | 157 | 128 | 1412 | 5.43 | Deleted |
| 50 | 934.44 | 1869.57 | 69 | 59 | 47 | 418 | 1.81 | Unknown |
| 51 | 950.15 | 1900.97 | 77 | 62 | 49 | 443 | 1.89 | 1461SEsc |
| 56 | 1377.55 | 2755.06 | 96 | 48 | 36 | 224 | 2.34 | Unknown |
| 58 | 1764.58 | 3528.42 | 350 | 97 | 74 | 111 | 3.00 | Unknown |
| 59 | 1848.69 | 3696.49 | 36 | 29 | 22 | 86 | 1.88 | Unknown |

000213

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-13 GS040601-7

Code: 041072D03A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 11:22:23 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.27E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.10E+002 g | Real Time | 1806 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041072D03.SPC |

Detector #: 3 (Detector 3)
 Energy(keV) = -0.95 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004
 FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 74.82 | 151.43 | 122 | 42 | 30 | 162 | 1.03 | a |
| 2 | 76.96 | 155.71 | 128 | 43 | 30 | 162 | 0.97 | b |
| 3 | 86.94 | 175.66 | 38 | 45 | 35 | 214 | 1.19 | a |
| 4 | 92.64 | 187.04 | 55 | 35 | 26 | 135 | 0.84 | a |
| 5 | 156.28 | 314.24 | 17 | 21 | 16 | 61 | 0.53 | a |
| 6 | 186.03 | 373.70 | 112 | 39 | 27 | 120 | 1.21 | a |
| 7 | 210.13 | 421.88 | 8 | 68 | 56 | 279 | 3.10 | a NET< CL Wide Pk |
| 8 | 238.65 | 478.86 | 291 | 44 | 23 | 89 | 1.10 | a |
| 9 | 241.88 | 485.31 | 101 | 42 | 30 | 127 | 1.61 | b |
| 10 | 270.12 | 541.76 | 21 | 19 | 14 | 44 | 0.77 | a |
| 11 | 295.21 | 591.90 | 182 | 35 | 19 | 68 | 1.21 | a |
| 12 | 338.28 | 677.99 | 56 | 25 | 16 | 53 | 1.09 | a |
| 13 | 351.90 | 705.21 | 344 | 44 | 20 | 63 | 1.59 | a |
| 14 | 510.57 | 1022.33 | 52 | 29 | 21 | 69 | 2.21 | a |
| 15 | 583.12 | 1167.34 | 73 | 23 | 12 | 32 | 1.35 | a |
| 16 | 609.25 | 1219.55 | 252 | 35 | 12 | 26 | 1.81 | a |
| 17 | 661.73 | 1324.44 | 155 | 30 | 14 | 37 | 1.60 | a |
| 18 | 911.03 | 1822.70 | 46 | 20 | 12 | 27 | 1.92 | a |
| 19 | 1120.57 | 2241.50 | 50 | 20 | 12 | 21 | 2.57 | a |
| 20 | 1238.20 | 2476.60 | 17 | 14 | 10 | 17 | 1.73 | a |
| 21 | 1460.81 | 2921.52 | 184 | 29 | 9 | 13 | 2.28 | a |
| 22 | 1764.31 | 3528.10 | 51 | 15 | 3 | 2 | 2.88 | a |

041072D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 74.82 | 122 | 42 | 30 | 118 | 42 | 30 | |
| 2 | 76.96 | 128 | 43 | 30 | 125 | 43 | 30 | |
| 4 | 92.64 | 55 | 35 | 26 | 39 | 35 | 27 | |
| 6 | 186.03 | 112 | 39 | 27 | 102 | 39 | 27 | |
| 8 | 238.65 | 291 | 44 | 23 | 284 | 44 | 23 | |
| 11 | 295.21 | 182 | 35 | 19 | 179 | 36 | 19 | |
| 12 | 338.28 | 56 | 25 | 16 | 55 | 25 | 17 | |
| 13 | 351.90 | 344 | 44 | 20 | 338 | 44 | 20 | |
| 14 | 510.57 | 52 | 29 | 21 | 3 | 30 | 25 | NET<CL |
| 15 | 583.12 | 73 | 23 | 12 | 67 | 23 | 13 | |
| 16 | 609.25 | 252 | 35 | 12 | 249 | 35 | 13 | |
| 18 | 911.03 | 46 | 20 | 12 | 43 | 20 | 13 | |
| 21 | 1460.81 | 184 | 29 | 9 | 176 | 29 | 10 | |
| 22 | 1764.31 | 51 | 15 | 3 | 50 | 15 | 4 | |

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-13 GS040601-7

Code: 041072D03A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 11:22:23 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.27e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.10e+002 g | Real Time | 1806 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041072D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[3.80E-03*En^-3.74E+00 + 1.52E+02*En^7.83E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) | |
|---------|-----------------|------------|--------------------------|-------------|-------------------|-------------------|----------|
| Th-234 | 92.50 | 1.35E+00 | +- 1.21E+00 | 1.95E+00 | 9.27E-01 | 3.92E+13 | |
| U-235 | 143.76 | N | 2.24E-01 | +- 3.95E-01 | 6.60E-01 | 3.12E-01 | 6.17E+12 |
| | 185.72 | | I.D. | | | | 6.17E+12 |
| Pb-212 | 238.63 | 1.27E+00 | +- 1.98E-01 | 2.22E-01 | 1.05E-01 | 1.67E+04 | |
| Pb-214 | Average:x | 2.16E+00 | +- 2.36E-01 | | | | 1.40E+07 |
| | 295.22 | 2.01E+00 | +- 3.98E-01 | 4.62E-01 | 2.16E-01 | 1.40E+07 | |
| | 351.99 | 2.24E+00 | +- 2.93E-01 | 2.86E-01 | 1.34E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 9.89E-01 | +- 3.26E-01 | | | | 5.04E+04 |
| | 338.40 | 1.18E+00 | +- 5.40E-01 | 7.78E-01 | 3.60E-01 | 5.04E+04 | |
| | 911.07 | 8.79E-01 | +- 4.10E-01 | 5.68E-01 | 2.56E-01 | 5.04E+04 | |
| Tl-208 | 583.14 | 2.90E-01 | +- 9.95E-02 | 1.27E-01 | 5.79E-02 | 1.27E+14 | |
| Bi-214 | Average:x | 2.04E+00 | +- 2.72E-01 | | | | 1.40E+07 |
| | 609.32 | 2.04E+00 | +- 2.89E-01 | 2.34E-01 | 1.06E-01 | 1.40E+07 | |
| | 1120.28 | 2.03E+00 | +- 8.03E-01 | 1.04E+00 | 4.67E-01 | 1.40E+07 | |
| Cs-137 | 661.62 | 7.37E-01 | +- 1.44E-01 | 1.47E-01 | 6.71E-02 | 2.64E+05 | |
| Co-56 | 1238.28 | 2.68E-01 | +- 2.21E-01 | 3.39E-01 | 1.49E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 1.20E+01 | +- 1.99E+00 | 1.55E+00 | 6.81E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N-1.67E-01 | +- 5.11E-01 | 9.03E-01 | 4.29E-01 | 3.80E+06 | |
| Eu-155 | 105.31 | N | 1.22E-01 | +- 2.36E-01 | 3.96E-01 | 1.88E-01 | 4.35E+04 |
| Co-57 | 122.07 | N | 5.77E-03 | +- 5.67E-02 | 9.78E-02 | 4.63E-02 | 6.48E+03 |
| Ce-144 | 133.53 | N-2.89E-02 | +- 4.41E-01 | 7.68E-01 | 3.64E-01 | 6.82E+03 | |
| Ce-139 | 165.85 | N-4.28E-02 | +- 7.63E-02 | 1.36E-01 | 6.50E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N-4.47E-01 | +- 6.54E-01 | 1.18E+00R | 5.71E-01 | 1.90E+05 | |
| Cr-51 | 320.07 | N-2.58E-01 | +- 1.90E+00 | 3.39E+00 | 1.58E+00 | 6.65E+02 | |
| I-131 | 364.48 | N-5.96E-01 | +- 5.84E+00 | 1.05E+01 | 4.85E+00 | 1.93E+02 | |

041072D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| Sb-125 | 427.95 | N | 3.22E-02 | +- 1.92E-01 | 3.37E-01 | 1.55E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 5.75E-01 | +- 1.12E+00 | 1.91E+00 | 8.74E-01 | 1.28E+03 |
| Sb-124 | 602.71 | N | 2.80E-02 | +- 1.07E-01 | 1.88E-01B | 8.47E-02 | 1.44E+03 |
| Cs-134 | 604.66 | N | 4.85E-02 | +- 8.09E-01 | 1.34E+00P | 6.66E-01 | 1.81E+04 |
| Ru-106 | 621.84 | N | 2.16E-01 | +- 6.75E-01 | 1.18E+00 | 5.32E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 7.90E-02 | +- 9.67E-02 | 1.97E-01R | 9.19E-02 | 6.00E+03 |
| Nb-94 | 702.50 | N | 7.63E-02 | +- 7.09E-02 | 1.43E-01 | 6.55E-02 | 1.78E+08 |
| Bi-212 | 727.17 | N | 1.25E+00 | +- 1.11E+00 | 1.74E+00 | 7.76E-01 | 1.67E+04 |
| Nb-95 | 765.82 | N | 6.65E-02 | +- 1.35E-01 | 2.30E-01 | 1.04E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 6.97E-02 | +- 9.92E-02 | 2.02E-01 | 9.03E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 2.26E-02 | +- 7.67E-02 | 1.35E-01 | 6.04E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 7.86E-02 | +- 1.11E-01 | 2.22E-01 | 1.00E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 7.36E+00 | +- 1.31E+01 | 2.58E+01 | 1.16E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 1.07E-01 | +- 3.71E-01 | 7.24E-01 | 3.20E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 8.57E-02 | +- 3.10E-01 | 5.52E-01 | 2.44E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 5.04E-02 | +- 4.01E-01 | 6.91E-01P | 3.27E-01 | 5.85E+03 |
| Na-22 | 1274.54 | N | 3.50E-02 | +- 8.71E-02 | 1.53E-01 | 6.68E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 3.55E-02 | +- 8.98E-02 | 1.76E-01 | 7.83E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 4.45E-01 | +- 4.30E-01 | 6.72E-01 | 2.89E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 2.66E-02 | +- 7.53E-02 | 1.37E-01 | 5.65E-02 | 6.31E+09 |

MEASURED TOTAL: 2.43E+01 +- 1.01E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 74.82 | 151.43 | 118 | 42 | 30 | 162 | 1.03 | Unknown |
| 2 | 76.96 | 155.71 | 125 | 43 | 30 | 162 | 0.97 | Unknown |
| 3 | 86.94 | 175.66 | 38 | 45 | 35 | 214 | 1.19 | Unknown |
| 5 | 156.28 | 314.24 | 17 | 21 | 16 | 61 | 0.53 | Unknown |
| 7 | 210.13 | 421.88 | 8 | 68 | 56 | 279 | 3.10 | Deleted |
| 9 | 241.88 | 485.31 | 101 | 42 | 30 | 127 | 1.61 | Unknown |
| 10 | 270.12 | 541.76 | 21 | 19 | 14 | 44 | 0.77 | Unknown |
| 14 | 510.57 | 1022.33 | 3 | 30 | 25 | 69 | 2.21 | Deleted |
| 22 | 1764.31 | 3528.10 | 50 | 15 | 4 | 2 | 2.88 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-13D GS040601-7

Code: 041075D02A

 Sampling Start: 05/04/2004 12:00:00 | Counting Start: 06/26/2004 12:03:52
 Sampling Stop: 05/04/2004 12:00:00 | Decay Time. 1.27E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
 Sample Size 4.10E+002 g | Real Time 1806 Sec
 Collection Efficiency 1.0000 | Spc. File 041075D02.SPC

Detector #: 2 (Detector 2)

Energy(keV) = -0.73 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 74.66 | 150.74 | 46 | 31 | 23 | 113 | 0.58 | a |
| 2 | 77.12 | 155.66 | 128 | 36 | 23 | 113 | 0.67 | b |
| 3 | 92.60 | 186.63 | 61 | 38 | 28 | 146 | 1.02 | a |
| 4 | 185.98 | 373.34 | 118 | 42 | 30 | 139 | 1.26 | a |
| 5 | 208.80 | 418.99 | 51 | 29 | 20 | 77 | 1.00 | a |
| 6 | 238.58 | 478.53 | 287 | 41 | 20 | 71 | 1.02 | a |
| 7 | 241.79 | 484.94 | 125 | 37 | 24 | 95 | 1.33 | b |
| 8 | 295.09 | 591.53 | 203 | 34 | 16 | 47 | 0.98 | a |
| 9 | 338.12 | 677.56 | 59 | 29 | 21 | 58 | 1.62 | a |
| 10 | 351.82 | 704.96 | 388 | 45 | 18 | 55 | 1.14 | a |
| 11 | 511.01 | 1023.28 | 78 | 29 | 19 | 52 | 2.18 | a Wide Pk |
| 12 | 583.31 | 1167.84 | 71 | 24 | 14 | 35 | 1.40 | a |
| 13 | 609.32 | 1219.86 | 268 | 36 | 12 | 27 | 1.17 | a |
| 14 | 661.64 | 1324.47 | 222 | 33 | 12 | 27 | 1.44 | a |
| 15 | 727.04 | 1455.26 | 26 | 14 | 8 | 12 | 0.93 | a |
| 16 | 911.13 | 1823.36 | 65 | 19 | 9 | 15 | 1.49 | a |
| 17 | 968.99 | 1939.05 | 33 | 18 | 12 | 26 | 1.44 | a |
| 18 | 1120.22 | 2241.45 | 51 | 20 | 12 | 24 | 1.75 | a |
| 19 | 1237.85 | 2476.68 | 17 | 15 | 10 | 18 | 2.21 | a |
| 20 | 1460.77 | 2922.42 | 208 | 29 | 5 | 4 | 2.21 | a |
| 21 | 1764.98 | 3530.72 | 27 | 11 | 2 | 1 | 1.37 | a |

041075D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 74.66 | 46 | 31 | 23 | 42 | 31 | 23 | |
| 2 | 77.12 | 128 | 36 | 23 | 124 | 36 | 23 | |
| 3 | 92.60 | 61 | 38 | 28 | 48 | 38 | 29 | |
| 4 | 185.98 | 118 | 42 | 30 | 110 | 42 | 30 | |
| 6 | 238.58 | 287 | 41 | 20 | 280 | 42 | 20 | |
| 8 | 295.09 | 203 | 34 | 16 | 200 | 35 | 17 | |
| 9 | 338.12 | 59 | 29 | 21 | 57 | 30 | 21 | |
| 10 | 351.82 | 388 | 45 | 18 | 383 | 45 | 18 | |
| 11 | 511.01 | 78 | 29 | 19 | 37 | 30 | 23 | |
| 12 | 583.31 | 71 | 24 | 14 | 66 | 24 | 15 | |
| 13 | 609.32 | 268 | 36 | 12 | 264 | 36 | 13 | |
| 16 | 911.13 | 65 | 19 | 9 | 63 | 19 | 9 | |
| 17 | 968.99 | 33 | 18 | 12 | 31 | 18 | 12 | |
| 20 | 1460.77 | 208 | 29 | 5 | 203 | 29 | 6 | |
| 21 | 1764.98 | 27 | 11 | 2 | 26 | 11 | 3 | |

041075D02.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-13D GS040601-7

Code: 041075D02A

Sampling Start: 05/04/2004 12:00:00 | Counting Start: 06/26/2004 12:03:52
Sampling Stop: 05/04/2004 12:00:00 | Decay Time. 1.27e+003 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 4.10e+002 g | Real Time 1806 Sec
Collection Efficiency 1.0000 | Spectrum File 041075D02.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[5.36E-04*En^-4.56E+00 + 1.37E+02*En^7.41E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) | Critical MDA | Halflife Level | (hrs) | |
|---------|-----------|--------------|-------------|-----------------------|--------------|----------------|-----------|----------|
| Th-234 | | 92.50 | 1.64E+00 | +- 1.28E+00 | 2.06E+00 | 9.83E-01 | 3.92E+13 | |
| U-235 | | 143.76 | N | 2.36E-01 | +- 3.43E-01 | 5.69E-01 | 2.68E-01 | 6.17E+12 |
| | | 185.72 | | I.D. | | | | 6.17E+12 |
| Pb-212 | | 238.63 | 1.19E+00 | +- 1.77E-01 | 1.85E-01 | 8.67E-02 | 1.67E+04 | |
| Pb-214 | Average:x | 2.30E+00 | +- 2.25E-01 | | | | 1.40E+07 | |
| | | 295.22 | 2.13E+00 | +- 3.72E-01 | 3.90E-01 | 1.81E-01 | 1.40E+07 | |
| | | 351.99 | 2.40E+00 | +- 2.82E-01 | 2.48E-01 | 1.15E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 1.13E+00 | +- 2.73E-01 | | | | 5.04E+04 | |
| | | 338.40 | 1.16E+00 | +- 6.02E-01 | 9.07E-01 | 4.26E-01 | 5.04E+04 | |
| | | 911.07 | 1.17E+00 | +- 3.60E-01 | 3.95E-01 | 1.72E-01 | 5.04E+04 | |
| | | 968.90 | 9.91E-01 | +- 5.78E-01 | 8.39E-01 | 3.77E-01 | 5.04E+04 | |
| Tl-208 | | 583.14 | 2.64E-01 | +- 9.65E-02 | 1.29E-01 | 5.89E-02 | 1.27E+14 | |
| Bi-214 | Average:x | 1.97E+00 | +- 2.54E-01 | | | | 1.40E+07 | |
| | | 609.32 | 1.99E+00 | +- 2.71E-01 | 2.12E-01 | 9.57E-02 | 1.40E+07 | |
| | | 1120.28 | 1.85E+00 | +- 7.29E-01 | 9.47E-01 | 4.24E-01 | 1.40E+07 | |
| Cs-137 | | 661.62 | 9.70E-01 | +- 1.46E-01 | 1.20E-01 | 5.43E-02 | 2.64E+05 | |
| Bi-212 | | 727.17 | 1.66E+00 | +- 8.71E-01 | 1.13E+00 | 4.79E-01 | 1.67E+04 | |
| Co-56 | | 1238.28 | 2.39E-01 | +- 2.07E-01 | 3.22E-01 | 1.42E-01 | 1.86E+03 | |
| K-40 | | 1460.75 | 1.23E+01 | +- 1.78E+00 | 9.19E-01 | 3.78E-01 | 1.12E+13 | |
| Am-241 | | 59.54 | N-5.16E-01 | +- 4.81E-01 | 9.30E-01 | 4.34E-01 | 3.80E+06 | |
| Eu-155 | | 105.31 | N | 1.50E-01 | +- 1.91E-01 | 3.15E-01 | 1.48E-01 | 4.35E+04 |
| Co-57 | | 122.07 | N-2.43E-02 | +- 4.36E-02 | 7.98E-02 | 3.75E-02 | 6.48E+03 | |
| Ce-144 | | 133.53 | N-2.91E-01 | +- 3.59E-01 | 6.63E-01 | 3.13E-01 | 6.82E+03 | |
| Ce-139 | | 165.85 | N-1.40E-02 | +- 5.53E-02 | 9.90E-02 | 4.64E-02 | 3.30E+03 | |
| Th-227 | | 236.00 | N | 2.84E-01 | +- 3.48E-01 | 5.71E-01B | 2.66E-01 | 1.90E+05 |

041075D02.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| Cr-51 | 320.07 | N | 4.89E-01 | +- 1.48E+00 | 2.56E+00 | 1.17E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 2.39E+00 | +- 5.39E+00 | 9.20E+00 | 4.22E+00 | 1.93E+02 |
| Sb-125 | 427.95 | N | 6.64E-02 | +- 1.66E-01 | 2.86E-01 | 1.30E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 8.93E-02 | +- 8.67E-01 | 1.56E+00 | 7.04E-01 | 1.28E+03 |
| Sb-124 | 602.71 | N | -2.59E-02 | +- 1.17E-01 | 2.15E-01 | 9.87E-02 | 1.44E+03 |
| Cs-134 | 604.66 | N | 5.21E-02 | +- 6.74E-02 | 1.11E-01B | 5.05E-02 | 1.81E+04 |
| Ru-106 | 621.84 | N | -3.18E-01 | +- 4.91E-01 | 9.96E-01 | 4.44E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | -9.08E-03 | +- 8.71E-02 | 1.59E-01R | 7.31E-02 | 6.00E+03 |
| Nb-94 | 702.50 | N | 4.44E-03 | +- 5.92E-02 | 1.07E-01 | 4.82E-02 | 1.78E+08 |
| Nb-95 | 765.82 | N | -1.44E-01 | +- 1.03E-01 | 2.20E-01 | 1.00E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 1.63E-02 | +- 8.68E-02 | 1.58E-01 | 6.91E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 3.26E-02 | +- 5.76E-02 | 9.85E-02 | 4.25E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 7.14E-03 | +- 8.91E-02 | 1.64E-01 | 7.24E-02 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 5.96E+00 | +- 8.52E+00 | 1.42E+01 | 5.95E+00 | 3.92E+13 |
| Eu-154 | 1004.80 | N | -2.55E-01 | +- 3.15E-01 | 6.66E-01 | 2.95E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 1.51E-01 | +- 2.36E-01 | 3.99E-01 | 1.70E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | -2.30E-04 | +- 3.71E-01 | 6.44E-01P | 3.05E-01 | 5.85E+03 |
| Na-22 | 1274.54 | N | 5.63E-02 | +- 5.73E-02 | 8.82E-02 | 3.56E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | -5.70E-02 | +- 5.22E-02 | 1.23E-01 | 5.31E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 3.11E-01 | +- 3.17E-01 | 4.93E-01 | 2.04E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | -3.25E-02 | +- 5.75E-02 | 1.29E-01 | 5.41E-02 | 6.31E+09 |

MEASURED TOTAL: 3.39E+01 +- 2.36E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 74.66 | 150.74 | 42 | 31 | 23 | 113 | 0.58 | Unknown |
| 2 | 77.12 | 155.66 | 124 | 36 | 23 | 113 | 0.67 | Unknown |
| 5 | 208.80 | 418.98 | 51 | 29 | 20 | 77 | 1.00 | Unknown |
| 7 | 241.79 | 484.94 | 125 | 37 | 24 | 95 | 1.33 | Unknown |
| 11 | 511.01 | 1023.28 | 37 | 30 | 23 | 52 | 2.18 | Unknown |
| 21 | 1764.98 | 3530.72 | 26 | 11 | 3 | 1 | 1.37 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0405096-14 GS040601-7

Code: 041073D03A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 12:04:00 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.27E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.31E+002 g | Real Time | 1806 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041073D03.SPC |

Detector #: 3 (Detector 3)

Energy(keV) = -0.95 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 73.08 | 147.94 | 27 | 33 | 26 | 136 | 0.77 | a |
| 2 | 74.83 | 151.45 | 85 | 37 | 26 | 136 | 0.84 | b |
| 3 | 77.00 | 155.79 | 150 | 40 | 26 | 136 | 0.82 | c |
| 4 | 87.09 | 175.96 | 64 | 36 | 26 | 129 | 0.92 | a |
| 5 | 89.79 | 181.36 | 35 | 23 | 16 | 65 | 0.50 | b |
| 6 | 92.83 | 187.43 | 75 | 40 | 30 | 151 | 1.12 | c |
| 7 | 186.07 | 373.78 | 88 | 30 | 20 | 78 | 0.80 | a |
| 8 | 209.55 | 420.70 | 49 | 34 | 26 | 105 | 1.26 | a |
| 9 | 238.59 | 478.74 | 301 | 44 | 23 | 89 | 1.09 | a |
| 10 | 241.67 | 484.91 | 81 | 38 | 28 | 114 | 1.54 | b |
| 11 | 295.20 | 591.89 | 151 | 34 | 19 | 65 | 1.24 | a |
| 12 | 337.91 | 677.25 | 41 | 28 | 20 | 69 | 1.62 | a |
| 13 | 351.86 | 705.13 | 313 | 40 | 15 | 44 | 1.36 | a |
| 14 | 510.78 | 1022.75 | 37 | 22 | 16 | 47 | 1.55 | a |
| 15 | 583.38 | 1167.86 | 99 | 26 | 14 | 37 | 1.45 | a |
| 16 | 609.31 | 1219.69 | 177 | 31 | 13 | 34 | 1.54 | a |
| 17 | 768.78 | 1538.40 | 14 | 13 | 9 | 17 | 0.90 | a |
| 18 | 911.09 | 1822.83 | 50 | 19 | 11 | 22 | 1.97 | a |
| 19 | 969.12 | 1938.81 | 37 | 18 | 10 | 23 | 1.41 | a |
| 20 | 1120.19 | 2240.75 | 39 | 20 | 13 | 28 | 2.59 | a |
| 21 | 1460.77 | 2921.44 | 185 | 29 | 7 | 8 | 2.63 | a |
| 22 | 1764.71 | 3528.90 | 42 | 13 | 0 | 0 | 2.92 | a |

041073D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 73.08 | 27 | 33 | 26 | 23 | 33 | 26 | NET<CL |
| 3 | 77.00 | 151 | 40 | 26 | 147 | 40 | 26 | |
| 6 | 92.83 | 75 | 40 | 30 | 59 | 40 | 31 | |
| 7 | 186.07 | 88 | 30 | 20 | 78 | 31 | 21 | |
| 9 | 238.59 | 301 | 44 | 23 | 294 | 45 | 23 | |
| 11 | 295.20 | 151 | 34 | 19 | 148 | 34 | 19 | |
| 12 | 337.91 | 41 | 28 | 20 | 39 | 28 | 21 | |
| 13 | 351.86 | 313 | 40 | 15 | 308 | 40 | 16 | |
| 14 | 510.78 | 37 | 22 | 16 | -12 | 23 | 20 | NET<CL |
| 15 | 583.38 | 99 | 26 | 14 | 94 | 26 | 15 | |
| 16 | 609.31 | 177 | 31 | 13 | 174 | 31 | 14 | |
| 18 | 911.09 | 50 | 19 | 11 | 48 | 20 | 11 | |
| 21 | 1460.77 | 185 | 29 | 7 | 178 | 29 | 9 | |
| 22 | 1764.71 | 42 | 13 | 0 | 41 | 13 | 3 | |

041073D03.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-14 GS040601-7

Code: 041073D03A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 12:04:00 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.27e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.31e+002 g | Real Time | 1806 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041073D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[3.80E-03*En^-3.74E+00 + 1.52E+02*En^7.83E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) | |
|---------|-----------|--------------|-------------|-----------------------|-------------|----------------|----------------|----------|
| Th-234 | | 92.50 | 1.93E+00 | +- 1.32E+00 | 2.09E+00 | 1.00E+00 | 3.92E+13 | |
| U-235 | | 143.76 | N | 1.64E-01 | +- 3.64E-01 | 6.13E-01 | 2.90E-01 | 6.17E+12 |
| | | 185.72 | | I.D. | | | | 6.17E+12 |
| Pb-212 | | 238.63 | 1.25E+00 | +- 1.90E-01 | 2.11E-01 | 9.96E-02 | 1.67E+04 | |
| Pb-214 | Average:x | 1.82E+00 | +- 2.08E-01 | | | | 1.40E+07 | |
| | | 295.22 | 1.58E+00 | +- 3.61E-01 | 4.42E-01 | 2.07E-01 | 1.40E+07 | |
| | | 351.99 | 1.94E+00 | +- 2.54E-01 | 2.22E-01 | 1.03E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 9.65E-01 | +- 2.79E-01 | | | | 5.04E+04 | |
| | | 338.40 | 8.00E-01 | +- 5.76E-01 | 9.06E-01 | 4.25E-01 | 5.04E+04 | |
| | | 911.07 | 9.22E-01 | +- 3.80E-01 | 4.96E-01 | 2.22E-01 | 5.04E+04 | |
| | | 968.90 | 1.23E+00 | +- 5.84E-01 | 7.86E-01 | 3.48E-01 | 5.04E+04 | |
| Tl-208 | | 583.14 | 3.84E-01 | +- 1.08E-01 | 1.31E-01 | 5.99E-02 | 1.27E+14 | |
| Bi-214 | Average:x | 1.37E+00 | +- 2.32E-01 | | | | 1.40E+07 | |
| | | 609.32 | 1.35E+00 | +- 2.44E-01 | 2.38E-01 | 1.08E-01 | 1.40E+07 | |
| | | 1120.28 | 1.49E+00 | +- 7.78E-01 | 1.12E+00 | 5.09E-01 | 1.40E+07 | |
| K-40 | | 1460.75 | 1.15E+01 | +- 1.85E+00 | 1.30E+00 | 5.62E-01 | 1.12E+13 | |
| Am-241 | | 59.54 | N | 2.54E-01 | +- 4.93E-01 | 8.27E-01 | 3.92E-01 | 3.80E+06 |
| Eu-155 | | 105.31 | N | 1.45E-01 | +- 2.06E-01 | 3.41E-01 | 1.61E-01 | 4.35E+04 |
| Co-57 | | 122.07 | N | -1.10E-02 | +- 5.35E-02 | 9.41E-02 | 4.46E-02 | 6.48E+03 |
| Ce-144 | | 133.53 | N | -1.79E-01 | +- 3.68E-01 | 6.64E-01 | 3.13E-01 | 6.82E+03 |
| Ce-139 | | 165.85 | N | 2.21E-02 | +- 7.32E-02 | 1.24E-01 | 5.91E-02 | 3.30E+03 |
| Th-227 | | 236.00 | N | 2.83E-02 | +- 6.50E-01 | 1.10E+00R | 5.33E-01 | 1.90E+05 |
| Cr-51 | | 320.07 | N | -2.46E-01 | +- 1.69E+00 | 3.05E+00 | 1.41E+00 | 6.65E+02 |
| I-131 | | 364.48 | N | -1.13E+00 | +- 5.73E+00 | 1.04E+01 | 4.80E+00 | 1.93E+02 |
| Sb-125 | | 427.95 | N | -2.00E-02 | +- 1.84E-01 | 3.32E-01 | 1.53E-01 | 2.43E+04 |

041073D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | (hrs) |
|---------|-----------------|------------|--------------------------|-----------|-----------------|-------------------|-------|
| Be-7 | 477.56 | N-3.92E-01 | +- 1.05E+00 | 1.95E+00 | 9.01E-01 | 1.28E+03 | |
| Sb-124 | 602.71 | N 2.00E-02 | +- 1.09E-01 | 1.93E-01B | 8.76E-02 | 1.44E+03 | |
| Cs-134 | 604.66 | N 5.75E-02 | +- 6.37E-02 | 1.03E-01B | 4.63E-02 | 1.81E+04 | |
| Ru-106 | 621.84 | N 0.00E+00 | +- 6.14E-01 | 1.12E+00 | 5.05E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N-7.51E-02 | +- 7.62E-02 | 1.52E-01 | 6.99E-02 | 6.00E+03 | |
| Cs-137 | 661.62 | N 1.04E-01 | +- 8.11E-02 | 1.25E-01 | 5.65E-02 | 2.64E+05 | |
| Nb-94 | 702.50 | N 5.53E-02 | +- 5.68E-02 | 9.04E-02 | 3.96E-02 | 1.78E+08 | |
| Bi-212 | 727.17 | N 1.56E+00 | +- 1.16E+00 | 1.76E+00 | 7.91E-01 | 1.67E+04 | |
| Nb-95 | 765.82 | N 4.87E-02 | +- 1.93E-01 | 3.25E-01R | 1.52E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-9.28E-02 | +- 1.02E-01 | 2.10E-01 | 9.49E-02 | 1.70E+03 | |
| Mn-54 | 834.81 | N 1.25E-02 | +- 7.54E-02 | 1.35E-01 | 6.06E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N 7.47E-02 | +- 9.68E-02 | 1.59E-01 | 6.95E-02 | 2.01E+03 | |
| Pa-234m | 1001.03 | N-8.86E+00 | +- 1.25E+01 | 2.49E+01 | 1.12E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N 1.71E-01 | +- 3.75E-01 | 6.51E-01 | 2.85E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 1.71E-02 | +- 2.68E-01 | 4.97E-01 | 2.18E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N-2.03E-02 | +- 3.77E-01 | 6.58E-01P | 3.11E-01 | 5.85E+03 | |
| Co-56 | 1238.28 | N 1.19E-01 | +- 2.46E-01 | 4.21E-01 | 1.90E-01 | 1.86E+03 | |
| Na-22 | 1274.54 | N 1.33E-02 | +- 7.95E-02 | 1.45E-01 | 6.35E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N 1.01E-02 | +- 7.34E-02 | 1.36E-01 | 5.88E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 1.41E-01 | +- 3.24E-01 | 5.74E-01 | 2.42E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N 5.06E-02 | +- 6.19E-02 | 9.87E-02 | 3.80E-02 | 6.31E+09 | |

MEASURED TOTAL: 2.23E+01 +- 9.23E+00 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 73.08 | 147.94 | 23 | 33 | 26 | 136 | 0.77 | Deleted |
| 2 | 74.83 | 151.45 | 85 | 37 | 26 | 136 | 0.84 | Unknown |
| 3 | 77.00 | 155.79 | 147 | 40 | 26 | 136 | 0.82 | Unknown |
| 4 | 87.09 | 175.96 | 64 | 36 | 26 | 129 | 0.92 | Unknown |
| 5 | 89.79 | 181.36 | 35 | 23 | 16 | 65 | 0.50 | Unknown |
| 8 | 209.55 | 420.70 | 49 | 34 | 26 | 105 | 1.26 | Unknown |
| 10 | 241.67 | 484.91 | 81 | 38 | 28 | 114 | 1.54 | Unknown |
| 14 | 510.78 | 1022.75 | -12 | 23 | 20 | 47 | 1.55 | Deleted |
| 17 | 768.78 | 1538.40 | 14 | 13 | 9 | 17 | 0.90 | Unknown |
| 22 | 1764.71 | 3528.90 | 41 | 13 | 3 | 0 | 2.92 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-15 GS040601-6

Code: 041049D10A

Sampling Start: 05/04/2004 12:00:00 | Counting Start: 06/27/2004 19:05:56
Sampling Stop: 05/04/2004 12:00:00 | Decay Time. 1.30E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.04E+002 g | Real Time 1812 Sec
Collection Efficiency 1.0000 | Spc. File 041049D10.SPC

Detector #: 10 (Detector 10)
Energy(keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004
FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.51 | 95.28 | 47 | 51 | 41 | 246 | 2.00 | a |
| 2 | 63.35 | 128.94 | 41 | 32 | 24 | 133 | 0.85 | a |
| 3 | 74.85 | 151.92 | 145 | 49 | 35 | 223 | 1.37 | a |
| 4 | 77.07 | 156.35 | 280 | 54 | 35 | 223 | 1.24 | b |
| 5 | 87.23 | 176.65 | 54 | 39 | 30 | 192 | 0.99 | a |
| 6 | 92.86 | 187.90 | 80 | 38 | 28 | 165 | 0.90 | a |
| 7 | 186.12 | 374.26 | 126 | 43 | 30 | 148 | 1.61 | a |
| 8 | 198.68 | 399.35 | 54 | 38 | 29 | 134 | 1.63 | a |
| 9 | 231.17 | 464.27 | 30 | 29 | 23 | 99 | 1.41 | a |
| 10 | 238.56 | 479.04 | 384 | 50 | 26 | 121 | 1.80 | b |
| 11 | 241.62 | 485.16 | 111 | 35 | 23 | 99 | 1.42 | c |
| 12 | 295.22 | 592.26 | 233 | 42 | 24 | 105 | 1.64 | a |
| 13 | 338.45 | 678.65 | 73 | 40 | 30 | 125 | 2.54 | a |
| 14 | 352.04 | 705.80 | 405 | 48 | 22 | 85 | 1.85 | a |
| 15 | 511.10 | 1023.63 | 161 | 40 | 25 | 95 | 2.75 | a |
| 16 | 583.02 | 1167.36 | 103 | 34 | 22 | 80 | 2.60 | a |
| 17 | 609.66 | 1220.58 | 338 | 49 | 27 | 117 | 2.68 | a |
| 18 | 769.29 | 1539.56 | 34 | 38 | 30 | 97 | 4.81 | a Wide Pk |
| 19 | 911.64 | 1824.01 | 70 | 30 | 20 | 64 | 2.85 | a |
| 20 | 969.45 | 1939.53 | 35 | 23 | 16 | 46 | 2.01 | a |
| 21 | 1121.57 | 2243.49 | 46 | 22 | 15 | 38 | 2.11 | a |
| 22 | 1460.90 | 2921.54 | 314 | 43 | 21 | 44 | 5.02 | a |
| 23 | 1764.20 | 3527.60 | 76 | 26 | 16 | 28 | 4.93 | a |

041049D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.51 | 47 | 51 | 41 | 16 | 52 | 42 | NET<CL |
| 2 | 63.35 | 41 | 32 | 24 | 18 | 33 | 26 | NET<CL |
| 3 | 74.85 | 145 | 49 | 35 | 116 | 50 | 37 | |
| 4 | 77.07 | 280 | 54 | 35 | 245 | 55 | 37 | |
| 5 | 87.23 | 54 | 40 | 30 | 40 | 40 | 31 | |
| 6 | 92.86 | 80 | 38 | 28 | 25 | 40 | 31 | NET<CL |
| 7 | 186.12 | 126 | 43 | 30 | 81 | 44 | 33 | |
| 8 | 198.68 | 54 | 38 | 29 | 30 | 39 | 30 | NET<CL |
| 10 | 238.56 | 384 | 50 | 26 | 355 | 51 | 28 | |
| 11 | 241.62 | 111 | 35 | 23 | 85 | 35 | 25 | |
| 12 | 295.22 | 233 | 42 | 24 | 180 | 43 | 28 | |
| 13 | 338.45 | 73 | 40 | 30 | 71 | 40 | 30 | |
| 14 | 352.04 | 405 | 48 | 22 | 310 | 49 | 28 | |
| 15 | 511.10 | 161 | 40 | 25 | 12 | 41 | 34 | NET<CL |
| 16 | 583.02 | 103 | 34 | 22 | 91 | 35 | 24 | |
| 17 | 609.66 | 338 | 49 | 27 | 233 | 51 | 33 | |
| 18 | 769.29 | 34 | 38 | 30 | 25 | 39 | 31 | NET<CL |
| 19 | 911.64 | 70 | 30 | 20 | 61 | 31 | 22 | |
| 21 | 1121.57 | 46 | 22 | 15 | 23 | 24 | 18 | |
| 22 | 1460.90 | 314 | 43 | 21 | 270 | 44 | 24 | |
| 23 | 1764.20 | 76 | 26 | 16 | 54 | 27 | 19 | |

041049D10.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-15 GS040601-6

Code: 041049D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/27/2004 19:05:56 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.30e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.04e+002 g | Real Time | 1812 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041049D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10) (Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004

Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | N | ENERGY (keV) | E | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | 92.50 | N | 5.98E-01 | +- 9.46E-01 | 1.57E+00 | 7.53E-01 | 3.92E+13 | |
| U-235 | 143.76 | N | 2.61E-01 | +- 3.38E-01 | 5.58E-01 | 2.65E-01 | 6.17E+12 | |
| | 185.72 | | I.D. | | | | 6.17E+12 | |
| Pb-212 | 238.63 | | 1.20E+00 | +- 1.72E-01 | 2.01E-01 | 9.60E-02 | 1.67E+04 | |
| Pb-214 | Average:x | 1.57E+00 | +- 2.08E-01 | | | | 1.40E+07 | |
| | 295.22 | | 1.54E+00 | +- 3.68E-01 | 4.95E-01 | 2.36E-01 | 1.40E+07 | |
| | 351.99 | | 1.59E+00 | +- 2.52E-01 | 3.03E-01 | 1.45E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 1.03E+00 | +- 3.36E-01 | | | | 5.04E+04 | |
| | 338.40 | | 1.17E+00 | +- 6.68E-01 | 1.04E+00 | 5.00E-01 | 5.04E+04 | |
| | 911.07 | | 9.82E-01 | +- 4.94E-01 | 7.45E-01 | 3.51E-01 | 5.04E+04 | |
| | 968.90 | | 9.79E-01 | +- 6.27E-01 | 9.53E-01 | 4.39E-01 | 5.04E+04 | |
| Tl-208 | 583.14 | | 3.08E-01 | +- 1.17E-01 | 1.70E-01 | 8.04E-02 | 1.27E+14 | |
| Bi-214 | Average:x | 1.38E+00 | +- 2.99E-01 | | | | 1.40E+07 | |
| | 609.32 | | 1.50E+00 | +- 3.26E-01 | 4.45E-01 | 2.14E-01 | 1.40E+07 | |
| | 1120.28 | | 7.36E-01 | +- 7.62E-01 | 1.24E+00 | 5.75E-01 | 1.40E+07 | |
| K-40 | 1460.75 | | 1.48E+01 | +- 2.41E+00 | 2.78E+00 | 1.32E+00 | 1.12E+13 | |
| Am-241 | 59.54 | N | 6.31E-02 | +- 1.98E-01 | 3.35E-01B | 1.60E-01 | 3.80E+06 | |
| Eu-155 | 105.31 | N | 2.45E-01 | +- 1.99E-01 | 3.18E-01 | 1.51E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N | 2.06E-02 | +- 4.89E-02 | 8.25E-02 | 3.91E-02 | 6.48E+03 | |
| Ce-144 | 133.53 | N | -1.19E-02 | +- 3.94E-01 | 6.82E-01 | 3.25E-01 | 6.82E+03 | |
| Ce-139 | 165.85 | N | -2.22E-02 | +- 6.81E-02 | 1.19E-01 | 5.70E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N | -1.80E+00 | +- 6.21E-01 | 1.25E+00R | 6.09E-01 | 1.90E+05 | |
| Cr-51 | 320.07 | N | -4.10E-01 | +- 1.78E+00 | 3.17E+00 | 1.49E+00 | 6.65E+02 | |
| I-131 | 364.48 | N | 5.28E+00 | +- 6.36E+00 | 1.18E+01 | 5.57E+00 | 1.93E+02 | |

041049D10.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------|-------------------|-------------------|
| Sb-125 | 427.95 | N | 1.54E-02 | +- 1.84E-01 | 3.22E-01 | 1.51E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 8.40E-01 | +- 1.13E+00 | 2.09E+00 | 9.84E-01 | 1.28E+03 |
| Sb-124 | 602.71 | N | 1.45E+00 | +- 3.55E-01 | 2.25E+00P | 1.12E+00 | 1.44E+03 |
| Cs-134 | 604.66 | N | 9.36E-01 | +- 7.74E-01 | 1.27E+00P | 6.30E-01 | 1.81E+04 |
| Ru-106 | 621.84 | N | 6.80E-02 | +- 8.83E-01 | 1.54E+00 | 7.22E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 5.16E-02 | +- 1.11E-01 | 1.99E-01 | 9.43E-02 | 6.00E+03 |
| Cs-137 | 661.62 | N | 2.06E-01 | +- 1.08E-01 | 1.63E-01 | 7.63E-02 | 2.64E+05 |
| Nb-94 | 702.50 | N | 2.88E-02 | +- 8.74E-02 | 1.57E-01 | 7.37E-02 | 1.78E+08 |
| Bi-212 | 727.17 | N | 1.58E+00 | +- 1.51E+00 | 2.44E+00 | 1.14E+00 | 1.67E+04 |
| Nb-95 | 765.82 | N | 2.65E-01 | +- 2.35E-01 | 4.48E-01R | 2.16E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 6.07E-02 | +- 1.58E-01 | 2.69E-01 | 1.26E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 3.88E-02 | +- 1.14E-01 | 1.94E-01 | 9.10E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 0.00E+00 | +- 1.42E-01 | 2.51E-01 | 1.17E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 4.82E+00 | +- 1.57E+01 | 2.70E+01 | 1.25E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 2.96E-01 | +- 5.43E-01 | 9.15E-01 | 4.24E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 2.83E-01 | +- 4.76E-01 | 8.73E-01 | 4.10E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 3.68E-01 | +- 4.37E-01 | 7.17E-01P | 3.44E-01 | 5.85E+03 |
| Co-56 | 1238.28 | N | 3.07E-01 | +- 3.37E-01 | 5.49E-01 | 2.57E-01 | 1.86E+03 |
| Na-22 | 1274.54 | N | 1.14E-01 | +- 1.41E-01 | 2.62E-01 | 1.23E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N | 5.70E-02 | +- 1.03E-01 | 1.75E-01 | 7.96E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 3.25E-01 | +- 6.17E-01 | 1.04E+00 | 4.82E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 8.98E-03 | +- 1.30E-01 | 2.35E-01 | 1.08E-01 | 6.31E+09 |

MEASURED TOTAL: 3.20E+01 +- 2.71E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (kev) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.51 | 95.28 | 16 | 52 | 42 | 246 | 2.00 | Deleted |
| 2 | 63.35 | 128.94 | 18 | 33 | 26 | 133 | 0.85 | Deleted |
| 3 | 74.85 | 151.92 | 116 | 50 | 37 | 223 | 1.37 | Unknown |
| 4 | 77.07 | 156.35 | 245 | 55 | 37 | 223 | 1.24 | Unknown |
| 5 | 87.23 | 176.65 | 40 | 40 | 31 | 192 | 0.99 | Unknown |
| 8 | 198.68 | 399.35 | 30 | 39 | 30 | 134 | 1.63 | Deleted |
| 9 | 231.17 | 464.27 | 30 | 29 | 23 | 99 | 1.41 | Unknown |
| 11 | 241.62 | 485.16 | 85 | 35 | 25 | 99 | 1.42 | Unknown |
| 15 | 511.10 | 1023.63 | 12 | 41 | 34 | 95 | 2.75 | Deleted |
| 18 | 769.29 | 1539.56 | 25 | 39 | 31 | 97 | 4.81 | Deleted |
| 23 | 1764.20 | 3527.60 | 54 | 27 | 19 | 28 | 4.93 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-16 GS040601-6

Code: 041050D10A

Sampling Start: 05/04/2004 12:00:00 | Counting Start: 06/27/2004 20:03:51
Sampling Stop: 05/04/2004 12:00:00 | Decay Time. 1.30E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.05E+002 g | Real Time 1818 Sec
Collection Efficiency 1.0000 | Spc. File 041050D10.SPC

Detector #: 10 (Detector 10)
Energy(keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004
FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 46.14 | 94.54 | 99 | 46 | 34 | 199 | 1.51 | a |
| 2 | 63.43 | 129.10 | 53 | 47 | 37 | 253 | 1.31 | a |
| 3 | 74.78 | 151.77 | 282 | 64 | 45 | 314 | 1.76 | a |
| 4 | 77.03 | 156.27 | 372 | 58 | 35 | 228 | 1.23 | b |
| 5 | 84.18 | 170.57 | 27 | 31 | 24 | 138 | 0.65 | a |
| 6 | 87.14 | 176.47 | 59 | 45 | 35 | 242 | 1.10 | b |
| 7 | 92.88 | 187.94 | 117 | 48 | 35 | 240 | 1.20 | a |
| 8 | 128.63 | 259.39 | 39 | 25 | 18 | 76 | 0.73 | a |
| 9 | 186.07 | 374.15 | 188 | 48 | 33 | 168 | 1.87 | a |
| 10 | 209.38 | 420.74 | 43 | 36 | 27 | 139 | 1.24 | a |
| 11 | 238.62 | 479.16 | 520 | 59 | 30 | 161 | 1.86 | a |
| 12 | 241.91 | 485.73 | 155 | 46 | 32 | 175 | 1.96 | b |
| 13 | 270.34 | 542.55 | 39 | 29 | 21 | 94 | 1.37 | a |
| 14 | 295.15 | 592.13 | 336 | 51 | 29 | 145 | 1.95 | a |
| 15 | 338.31 | 678.37 | 121 | 42 | 30 | 129 | 2.44 | a |
| 16 | 352.00 | 705.73 | 564 | 58 | 27 | 124 | 1.98 | a |
| 17 | 462.67 | 926.86 | 39 | 33 | 25 | 109 | 2.25 | a |
| 18 | 511.00 | 1023.43 | 184 | 44 | 29 | 123 | 2.88 | a |
| 19 | 583.33 | 1167.97 | 136 | 42 | 29 | 119 | 3.06 | a |
| 20 | 609.71 | 1220.68 | 415 | 51 | 25 | 101 | 2.46 | a |
| 21 | 662.36 | 1325.89 | 50 | 35 | 26 | 95 | 3.20 | a |
| 22 | 911.25 | 1823.23 | 144 | 33 | 19 | 51 | 3.03 | a |
| 23 | 968.98 | 1938.59 | 61 | 30 | 21 | 59 | 3.61 | a |
| 24 | 1120.98 | 2242.32 | 94 | 32 | 21 | 58 | 3.50 | a |

041050D10.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 1377.86 | 2755.61 | 32 | 24 | 18 | 38 | 4.12 | a |
| 26 | 1460.65 | 2921.05 | 267 | 41 | 21 | 45 | 4.93 | a |
| 27 | 1764.31 | 3527.83 | 90 | 26 | 14 | 17 | 6.79 | a |

041050D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.14 | 99 | 46 | 34 | 69 | 46 | 36 | |
| 2 | 63.43 | 53 | 47 | 37 | 30 | 48 | 39 | NET<CL |
| 3 | 74.78 | 282 | 64 | 45 | 252 | 65 | 47 | |
| 4 | 77.03 | 372 | 58 | 35 | 338 | 58 | 37 | |
| 5 | 84.18 | 27 | 31 | 24 | 19 | 32 | 25 | NET<CL |
| 6 | 87.14 | 59 | 45 | 35 | 45 | 46 | 36 | |
| 7 | 92.88 | 117 | 48 | 35 | 63 | 49 | 38 | |
| 9 | 186.07 | 188 | 48 | 33 | 143 | 49 | 36 | |
| 11 | 238.62 | 520 | 59 | 30 | 492 | 59 | 32 | |
| 12 | 241.90 | 155 | 46 | 32 | 129 | 47 | 34 | |
| 13 | 270.34 | 39 | 29 | 21 | 36 | 30 | 23 | |
| 14 | 295.15 | 336 | 51 | 29 | 283 | 52 | 33 | |
| 15 | 338.31 | 121 | 42 | 30 | 118 | 42 | 30 | |
| 16 | 352.00 | 564 | 58 | 27 | 469 | 59 | 32 | |
| 18 | 511.00 | 184 | 44 | 29 | 35 | 46 | 37 | NET<CL |
| 19 | 583.33 | 136 | 42 | 29 | 124 | 43 | 30 | |
| 20 | 609.71 | 415 | 51 | 25 | 310 | 52 | 31 | |
| 22 | 911.25 | 144 | 33 | 19 | 134 | 34 | 20 | |
| 24 | 1120.98 | 94 | 32 | 21 | 71 | 33 | 23 | |
| 25 | 1377.86 | 32 | 24 | 18 | 29 | 25 | 18 | |
| 26 | 1460.65 | 267 | 41 | 21 | 223 | 42 | 24 | |
| 27 | 1764.31 | 90 | 26 | 14 | 68 | 26 | 17 | |

Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-16 GS040601-6

Code: 041050D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/27/2004 20:03:51 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.30e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.05e+002 g | Real Time | 1818 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041050D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10) (Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004
Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV-----
Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E (T) | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | 92.50 | 1.50E+00 | +- 1.16E+00 | 1.86E+00 | 8.99E-01 | 3.92E+13 | | |
| U-235 | 143.76 | N | 1.87E-01 | +- 3.71E-01 | 6.21E-01 | 2.97E-01 | 6.17E+12 | |
| | 185.72 | | I.D. | | | | 6.17E+12 | |
| Pb-212 | 238.63 | 1.65E+00 | +- 1.98E-01 | 2.25E-01 | 1.08E-01 | 1.67E+04 | | |
| Pb-214 | Average:x | 2.39E+00 | +- 2.47E-01 | | | 1.40E+07 | | |
| | 295.22 | 2.41E+00 | +- 4.42E-01 | 5.77E-01 | 2.77E-01 | 1.40E+07 | | |
| | 351.99 | 2.39E+00 | +- 2.98E-01 | 3.44E-01 | 1.65E-01 | 1.40E+07 | | |
| Ra-228 | Average:x | 2.00E+00 | +- 3.82E-01 | | | 5.04E+04 | | |
| | 338.40 | 1.95E+00 | +- 7.01E-01 | 1.04E+00 | 4.96E-01 | 5.04E+04 | | |
| | 911.07 | 2.17E+00 | +- 5.43E-01 | 6.93E-01 | 3.25E-01 | 5.04E+04 | | |
| | 968.90 | 1.69E+00 | +- 8.33E-01 | 1.25E+00 | 5.87E-01 | 5.04E+04 | | |
| Sb-125 | Average:x | 2.89E-01 | +- 2.00E-01 | | | 2.43E+04 | | |
| | 463.51 | 9.05E-01 | +- 7.72E-01 | 1.24E+00 | 5.89E-01 | 2.43E+04 | | |
| | 427.95 | N | 2.45E-01 | +- 2.08E-01 | 3.31E-01 | 1.55E-01 | 2.43E+04 | |
| Tl-208 | 583.14 | 4.17E-01 | +- 1.43E-01 | 2.10E-01 | 1.00E-01 | 1.27E+14 | | |
| Bi-214 | Average:x | 2.01E+00 | +- 3.16E-01 | | | 1.40E+07 | | |
| | 609.32 | 1.98E+00 | +- 3.32E-01 | 4.19E-01 | 2.01E-01 | 1.40E+07 | | |
| | 1120.28 | 2.28E+00 | +- 1.05E+00 | 1.57E+00 | 7.41E-01 | 1.40E+07 | | |
| Cs-137 | 661.62 | 1.86E-01 | +- 1.29E-01 | 2.04E-01 | 9.72E-02 | 2.64E+05 | | |
| K-40 | 1460.75 | 1.21E+01 | +- 2.28E+00 | 2.77E+00 | 1.31E+00 | 1.12E+13 | | |
| Am-241 | 59.54 | N | 2.93E-01 | +- 2.16E-01 | 3.46E-01B | 1.66E-01 | 3.80E+06 | |
| Eu-155 | 105.31 | N | -1.78E-02 | +- 2.08E-01 | 3.60E-01 | 1.72E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N | 9.44E-03 | +- 5.32E-02 | 9.09E-02 | 4.33E-02 | 6.48E+03 | |
| Ce-144 | 133.53 | N | 5.91E-02 | +- 4.13E-01 | 7.06E-01 | 3.37E-01 | 6.82E+03 | |

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|---------|-----------------|--------|--------------------------|-----------|----------|-------------------|-------------------|
| Ce-139 | 165.85 | N-3.37E-02 | +- | 6.76E-02 | 1.19E-01 | 5.71E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N-1.75E+00 | +- | 6.86E-01 | 1.33E+00R | 6.51E-01 | 1.90E+05 | |
| Cr-51 | 320.07 | N-1.16E+00 | +- | 1.94E+00 | 3.50E+00 | 1.66E+00 | 6.65E+02 | |
| I-131 | 364.48 | N 5.24E+00 | +- | 6.76E+00 | 1.11E+01 | 5.22E+00 | 1.93E+02 | |
| Be-7 | 477.56 | N 0.00E+00 | +- | 1.16E+00 | 2.04E+00 | 9.55E-01 | 1.28E+03 | |
| Sb-124 | 602.71 | N 2.81E-01 | +- | 3.68E-01 | 3.07E+00P | 1.53E+00 | 1.44E+03 | |
| Cs-134 | 604.66 | N 2.73E-01 | +- | 1.05E+00 | 1.74E+00P | 8.64E-01 | 1.81E+04 | |
| Ru-106 | 621.84 | N-3.16E-01 | +- | 9.02E-01 | 1.61E+00 | 7.61E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N-1.03E-01 | +- | 1.56E-01 | 2.84E-01R | 1.37E-01 | 6.00E+03 | |
| Nb-94 | 702.50 | N 5.49E-02 | +- | 1.02E-01 | 1.71E-01 | 8.07E-02 | 1.78E+08 | |
| Bi-212 | 727.17 | N 6.17E-01 | +- | 1.50E+00 | 2.54E+00 | 1.20E+00 | 1.67E+04 | |
| Nb-95 | 765.82 | N 1.32E-01 | +- | 1.68E-01 | 2.77E-01 | 1.30E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-6.73E-02 | +- | 1.76E-01 | 3.15E-01 | 1.49E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N 1.93E-02 | +- | 1.18E-01 | 2.04E-01 | 9.60E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N 1.88E-02 | +- | 1.55E-01 | 2.70E-01 | 1.26E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 1.59E+01 | +- | 1.72E+01 | 2.79E+01 | 1.29E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N 5.80E-02 | +- | 5.74E-01 | 1.00E+00 | 4.68E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 2.72E-01 | +- | 4.42E-01 | 7.39E-01 | 3.43E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N 7.81E-01 | +- | 4.67E-01 | 7.35E-01P | 3.53E-01 | 5.85E+03 | |
| Co-56 | 1238.28 | N 3.28E-01 | +- | 3.82E-01 | 6.25E-01 | 2.95E-01 | 1.86E+03 | |
| Na-22 | 1274.54 | N-7.59E-02 | +- | 1.36E-01 | 2.49E-01 | 1.17E-01 | 2.28E+04 | |
| Co-60 | 1332.51 | N-2.84E-02 | +- | 1.42E-01 | 2.53E-01 | 1.19E-01 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 3.56E-01 | +- | 5.83E-01 | 9.77E-01 | 4.51E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N-7.87E-02 | +- | 1.43E-01 | 2.67E-01 | 1.24E-01 | 6.31E+09 | |

MEASURED TOTAL: 4.74E+01 +- 3.59E+01 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.14 | 94.54 | 69 | 46 | 36 | 199 | 1.51 | Unknown |
| 2 | 63.43 | 129.10 | 30 | 48 | 39 | 253 | 1.31 | Deleted |
| 3 | 74.78 | 151.77 | 252 | 65 | 47 | 314 | 1.76 | Unknown |
| 4 | 77.03 | 156.27 | 338 | 58 | 37 | 228 | 1.23 | Unknown |
| 5 | 84.18 | 170.57 | 19 | 32 | 25 | 138 | 0.65 | Deleted |
| 6 | 87.14 | 176.47 | 45 | 46 | 36 | 242 | 1.10 | Unknown |
| 8 | 128.63 | 259.39 | 39 | 25 | 18 | 76 | 0.73 | Unknown |
| 10 | 209.38 | 420.74 | 43 | 36 | 27 | 139 | 1.24 | Unknown |
| 12 | 241.90 | 485.73 | 129 | 47 | 34 | 175 | 1.96 | Unknown |
| 13 | 270.34 | 542.55 | 36 | 30 | 23 | 94 | 1.37 | Unknown |
| 18 | 511.00 | 1023.43 | 35 | 46 | 37 | 123 | 2.88 | Deleted |
| 25 | 1377.86 | 2755.61 | 29 | 25 | 18 | 38 | 4.12 | Unknown |
| 27 | 1764.31 | 3527.83 | 68 | 26 | 17 | 17 | 6.79 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0405096-17 GS040601-7

Code: 041060D08A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 12:04:09 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.27E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.00E+002 g | Real Time | 1805 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041060D08.SPC |

Detector #: 8 (Detector 8)

Energy(keV) = -0.38 + 0.500*Ch +-3.43E-07*Ch^2 + 1.39E-10*Ch^3 06/26/2004

FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.55 | 93.79 | 68 | 33 | 23 | 118 | 0.72 | a |
| 2 | 59.80 | 120.27 | 22 | 24 | 18 | 89 | 0.37 | a |
| 3 | 63.37 | 127.40 | 99 | 30 | 18 | 89 | 0.40 | b |
| 4 | 74.82 | 150.29 | 297 | 55 | 36 | 254 | 0.77 | a |
| 5 | 77.10 | 154.84 | 479 | 57 | 30 | 203 | 0.74 | b |
| 6 | 83.86 | 168.35 | 50 | 46 | 36 | 224 | 1.17 | a Wide Pk |
| 7 | 87.13 | 174.89 | 170 | 51 | 36 | 224 | 1.19 | b |
| 8 | 89.85 | 180.34 | 106 | 53 | 40 | 256 | 1.31 | c |
| 9 | 92.87 | 186.36 | 222 | 70 | 52 | 352 | 1.74 | d |
| 10 | 129.04 | 258.65 | 38 | 38 | 30 | 162 | 0.92 | a |
| 11 | 186.03 | 372.58 | 146 | 41 | 27 | 135 | 0.99 | a |
| 12 | 209.25 | 419.00 | 41 | 32 | 24 | 109 | 1.00 | a |
| 13 | 238.65 | 477.77 | 456 | 50 | 21 | 89 | 0.88 | a |
| 14 | 241.84 | 484.15 | 149 | 44 | 30 | 143 | 1.24 | b |
| 15 | 270.03 | 540.50 | 53 | 29 | 20 | 71 | 1.11 | a |
| 16 | 295.20 | 590.82 | 301 | 43 | 20 | 71 | 1.07 | a |
| 17 | 299.92 | 600.25 | 31 | 25 | 18 | 61 | 1.06 | b |
| 18 | 327.79 | 655.98 | 23 | 22 | 17 | 57 | 0.83 | a |
| 19 | 338.31 | 677.01 | 93 | 28 | 17 | 54 | 1.00 | a |
| 20 | 351.99 | 704.35 | 498 | 49 | 17 | 56 | 1.17 | a |
| 21 | 462.79 | 925.90 | 31 | 17 | 11 | 26 | 0.88 | a |
| 22 | 510.84 | 1021.94 | 115 | 30 | 18 | 48 | 1.77 | a |
| 23 | 583.28 | 1166.77 | 142 | 29 | 13 | 35 | 1.18 | a |
| 24 | 609.33 | 1218.85 | 311 | 39 | 14 | 34 | 1.30 | a |

041060D08.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 661.52 | 1323.17 | 66 | 23 | 13 | 37 | 1.36 | a |
| 26 | 727.22 | 1454.50 | 25 | 19 | 13 | 34 | 1.36 | a |
| 27 | 768.30 | 1536.60 | 31 | 15 | 8 | 17 | 0.87 | a |
| 28 | 911.12 | 1821.98 | 103 | 22 | 7 | 11 | 1.45 | a |
| 29 | 933.88 | 1867.44 | 30 | 15 | 9 | 14 | 1.48 | a |
| 30 | 968.94 | 1937.46 | 61 | 22 | 13 | 35 | 1.27 | a |
| 31 | 1120.34 | 2239.75 | 91 | 21 | 7 | 11 | 1.51 | a |
| 32 | 1238.13 | 2474.78 | 31 | 15 | 9 | 17 | 1.31 | a |
| 33 | 1460.93 | 2918.92 | 203 | 30 | 8 | 11 | 1.87 | a |
| 34 | 1765.78 | 3525.48 | 68 | 17 | 5 | 4 | 2.15 | a |

041060D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET080625.BKG (0418003-38 Weekly Background)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 46.55 | 68 | 33 | 23 | 50 | 33 | 25 | |
| 3 | 63.37 | 99 | 30 | 18 | 85 | 30 | 19 | |
| 4 | 74.82 | 297 | 55 | 36 | 291 | 55 | 36 | |
| 5 | 77.10 | 479 | 57 | 30 | 475 | 57 | 31 | |
| 6 | 83.86 | 50 | 46 | 36 | 45 | 47 | 37 | |
| 7 | 87.13 | 170 | 51 | 36 | 169 | 51 | 36 | |
| 9 | 92.87 | 222 | 70 | 52 | 198 | 70 | 53 | |
| 11 | 186.03 | 146 | 41 | 27 | 134 | 41 | 28 | |
| 13 | 238.65 | 456 | 50 | 21 | 447 | 50 | 22 | |
| 15 | 270.03 | 53 | 29 | 20 | 52 | 29 | 21 | |
| 16 | 295.20 | 301 | 43 | 20 | 300 | 43 | 21 | |
| 19 | 338.31 | 93 | 28 | 17 | 90 | 29 | 18 | |
| 20 | 351.99 | 498 | 49 | 17 | 495 | 49 | 17 | |
| 22 | 510.84 | 115 | 30 | 18 | 63 | 31 | 22 | |
| 23 | 583.28 | 142 | 29 | 13 | 139 | 29 | 14 | |
| 24 | 609.33 | 311 | 39 | 14 | 307 | 39 | 14 | |
| 28 | 911.12 | 103 | 22 | 7 | 101 | 22 | 8 | |
| 31 | 1120.34 | 91 | 21 | 7 | 90 | 21 | 7 | |
| 33 | 1460.93 | 203 | 30 | 8 | 195 | 30 | 9 | |

041060D08.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-17 GS040601-7

Code: 041060D08A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 12:04:09 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time | 1.27e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.00e+002 g | Real Time | 1805 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041060D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 8 (Detector 8)

Efficiency File: (D08) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|---|-----------|-------------------|-------------------|
| Am-241 | 59.54 | 9.79E-02 | +- 1.07E-01 | | 1.75E-01 | 8.12E-02 | 3.80E+06 |
| Th-234 | Average:x | 3.77E+00 | +- 9.52E-01 | | | | 3.92E+13 |
| | 63.29 | 3.35E+00 | +- 1.18E+00 | | 1.63E+00 | 7.63E-01 | 3.92E+13 |
| | 92.50 | 4.56E+00 | +- 1.62E+00 | | 2.50E+00 | 1.22E+00 | 3.92E+13 |
| U-235 | 143.76 | N-1.28E-01 | +- 3.82E-01 | | 6.77E-01 | 3.21E-01 | 6.17E+12 |
| | 185.72 | I.D. | | | | | 6.17E+12 |
| Pb-212 | Average:x | 2.06E+00 | +- 2.27E-01 | | | | 1.67E+04 |
| | 238.63 | 2.05E+00 | +- 2.29E-01 | | 2.13E-01 | 1.00E-01 | 1.67E+04 |
| | 300.09 | 2.25E+00 | +- 1.78E+00 | | 2.81E+00 | 1.31E+00 | 1.67E+04 |
| Pb-214 | Average:x | 3.39E+00 | +- 2.76E-01 | | | | 1.40E+07 |
| | 295.22 | 3.44E+00 | +- 4.91E-01 | | 5.07E-01 | 2.38E-01 | 1.40E+07 |
| | 351.99 | 3.36E+00 | +- 3.34E-01 | | 2.53E-01 | 1.17E-01 | 1.40E+07 |
| Ra-228 | Average:x | 2.10E+00 | +- 3.41E-01 | | | | 5.04E+04 |
| | 338.40 | 2.00E+00 | +- 6.30E-01 | | 8.34E-01 | 3.87E-01 | 5.04E+04 |
| | 911.07 | 2.13E+00 | +- 4.69E-01 | | 3.92E-01 | 1.67E-01 | 5.04E+04 |
| | 968.90 | 2.21E+00 | +- 8.06E-01 | | 1.04E+00 | 4.73E-01 | 5.04E+04 |
| Sb-125 | Average:x | 9.49E-02 | +- 2.06E-01 | | | | 2.43E+04 |
| | 463.51 | 9.64E-01 | +- 5.29E-01 | | 7.47E-01 | 3.32E-01 | 2.43E+04 |
| | 427.95 | N-6.08E-02 | +- 2.24E-01 | | 4.05E-01 | 1.89E-01 | 2.43E+04 |
| Tl-208 | 583.14 | 6.15E-01 | +- 1.28E-01 | | 1.34E-01 | 6.13E-02 | 1.27E+14 |
| Bi-214 | Average:x | 2.73E+00 | +- 3.07E-01 | | | | 1.40E+07 |
| | 609.32 | 2.58E+00 | +- 3.28E-01 | | 2.61E-01 | 1.19E-01 | 1.40E+07 |
| | 1120.28 | 3.74E+00 | +- 8.75E-01 | | 7.35E-01 | 3.11E-01 | 1.40E+07 |
| Cs-137 | 661.62 | 3.21E-01 | +- 1.12E-01 | | 1.44E-01 | 6.53E-02 | 2.64E+05 |
| Bi-212 | 727.17 | 1.82E+00 | +- 1.33E+00 | | 2.04E+00 | 9.25E-01 | 1.67E+04 |

041060D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|-----------------|-------------------|-------------------|
| Co-56 | 1238.28 | 5.06E-01 | + - 2.48E-01 | 3.26E-01 | 1.41E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 1.38E+01 | + - 2.12E+00 | 1.48E+00 | 6.43E-01 | 1.12E+13 | |
| Eu-155 | 105.31 | N 9.81E-02 | + - 2.09E-01 | 3.51E-01 | 1.67E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N 3.36E-02 | + - 5.23E-02 | 8.69E-02 | 4.11E-02 | 6.48E+03 | |
| Ce-144 | 133.53 | N-9.23E-02 | + - 4.32E-01 | 7.58E-01 | 3.60E-01 | 6.82E+03 | |
| Ce-139 | 165.85 | N-3.40E-02 | + - 7.68E-02 | 1.36E-01 | 6.49E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N 2.45E-01 | + - 4.39E-01 | 7.35E-01B | 3.47E-01 | 1.90E+05 | |
| Cr-51 | 320.07 | N 4.41E-01 | + - 1.98E+00 | 3.44E+00 | 1.60E+00 | 6.65E+02 | |
| I-131 | 364.48 | N-3.51E+00 | + - 5.70E+00 | 1.08E+01 | 4.99E+00 | 1.93E+02 | |
| Be-7 | 477.56 | N 2.42E-01 | + - 1.17E+00 | 2.05E+00 | 9.43E-01 | 1.28E+03 | |
| Sb-124 | 602.71 | N-7.20E-03 | + - 1.25E-01 | 2.27E-01 | 1.04E-01 | 1.44E+03 | |
| Cs-134 | 604.66 | N 1.35E-02 | + - 7.18E-02 | 1.27E-01B | 5.77E-02 | 1.81E+04 | |
| Ru-106 | 621.84 | N 2.27E-01 | + - 6.88E-01 | 1.20E+00 | 5.41E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N-3.55E-02 | + - 1.18E-01 | 2.17E-01R | 1.02E-01 | 6.00E+03 | |
| Nb-94 | 702.50 | N-4.88E-02 | + - 7.78E-02 | 1.49E-01 | 6.84E-02 | 1.78E+08 | |
| Nb-95 | 765.82 | N-1.49E-01 | + - 2.11E-01 | 4.07E-01R | 1.92E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-9.05E-02 | + - 1.15E-01 | 2.32E-01 | 1.05E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N 1.68E-02 | + - 9.31E-02 | 1.65E-01 | 7.49E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N 1.30E-02 | + - 1.23E-01 | 2.21E-01 | 9.95E-02 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 0.00E+00 | + - 1.27E+01 | 2.35E+01 | 1.04E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N 1.22E-01 | + - 4.14E-01 | 7.37E-01 | 3.24E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 2.48E-02 | + - 2.94E-01 | 5.43E-01 | 2.38E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N 3.77E-01 | + - 4.62E-01 | 7.60E-01P | 3.60E-01 | 5.85E+03 | |
| Na-22 | 1274.54 | N 3.76E-02 | + - 7.66E-02 | 1.33E-01 | 5.68E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N-1.60E-02 | + - 8.01E-02 | 1.57E-01 | 6.83E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 4.96E-01 | + - 4.23E-01 | 6.36E-01 | 2.69E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N 3.09E-03 | + - 7.40E-02 | 1.45E-01 | 6.02E-02 | 6.31E+09 | |

MEASURED TOTAL: 3.37E+01 +- 1.29E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.55 | 93.79 | 50 | 33 | 25 | 118 | 0.72 | Unknown |
| 4 | 74.82 | 150.29 | 291 | 55 | 36 | 254 | 0.77 | Unknown |
| 5 | 77.10 | 154.84 | 475 | 57 | 31 | 203 | 0.74 | Unknown |
| 6 | 83.86 | 168.35 | 45 | 47 | 37 | 224 | 1.17 | Unknown |
| 7 | 87.13 | 174.89 | 169 | 51 | 36 | 224 | 1.19 | Unknown |
| 8 | 89.85 | 180.34 | 106 | 53 | 40 | 256 | 1.31 | Unknown |
| 10 | 129.04 | 258.65 | 38 | 38 | 30 | 162 | 0.92 | Unknown |
| 12 | 209.25 | 419.00 | 41 | 32 | 24 | 109 | 1.00 | Unknown |
| 14 | 241.84 | 484.15 | 149 | 44 | 30 | 143 | 1.24 | Unknown |
| 15 | 270.03 | 540.50 | 52 | 29 | 21 | 71 | 1.11 | Unknown |
| 18 | 327.79 | 655.98 | 23 | 22 | 17 | 57 | 0.83 | Unknown |
| 22 | 510.84 | 1021.94 | 63 | 31 | 22 | 48 | 1.77 | Unknown |
| 27 | 768.30 | 1536.60 | 31 | 15 | 8 | 17 | 0.87 | Unknown |

041060D08.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 29 | 933.88 | 1867.44 | 30 | 15 | 9 | 14 | 1.48 | Unknown |
| 34 | 1765.78 | 3525.48 | 68 | 17 | 5 | 4 | 2.15 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-18 GS040601-6

Code: 041051D10A

Sampling Start: 05/05/2004 12:00:00 | Counting Start: 06/27/2004 20:59:21
Sampling Stop: 05/05/2004 12:00:00 | Decay Time. 1.28E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.16E+002 g | Real Time 1864 Sec
Collection Efficiency 1.0000 | Spc. File 041051D10.SPC

Detector #: 10 (Detector 10)
Energy(keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/27/2004
FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|--------------------|
| 1 | 46.35 | 94.96 | 382 | 113 | 87 | 1607 | 1.04 | a |
| 2 | 53.19 | 108.64 | 153 | 114 | 91 | 1763 | 0.96 | a |
| 3 | 63.18 | 128.60 | 1136 | 171 | 129 | 3087 | 1.25 | a |
| 4 | 74.64 | 151.50 | 1112 | 223 | 175 | 6060 | 0.84 | |
| 5 | 77.09 | 156.40 | 4998 | 269 | 188 | 6174 | 1.25 | |
| 6 | 80.76 | 163.73 | 265 | 141 | 113 | 2516 | 2.51 | |
| 7 | 83.95 | 170.09 | 865 | 160 | 122 | 2752 | 1.30 | |
| 8 | 87.10 | 176.39 | 428 | 198 | 159 | 4696 | 0.44 | |
| 9 | 92.87 | 187.92 | 3117 | 205 | 141 | 3280 | 1.63 | |
| 10 | 99.16 | 200.50 | 128 | 216 | 176 | 3831 | 0.53 | NET< CL Wide Pk |
| 11 | 105.09 | 212.34 | 128 | 137 | 111 | 2152 | 1.05 | |
| 12 | 115.10 | 232.34 | 61 | 76 | 61 | 918 | 0.67 | a |
| 13 | 128.89 | 259.90 | 453 | 125 | 97 | 1736 | 1.39 | a |
| 14 | 143.66 | 289.41 | 366 | 142 | 112 | 2071 | 1.64 | a |
| 15 | 153.91 | 309.90 | 244 | 131 | 104 | 1891 | 1.48 | a |
| 16 | 163.36 | 328.78 | 76 | 124 | 101 | 1774 | 1.50 | a NET< CL |
| 17 | 172.61 | 347.26 | 48 | 91 | 74 | 1156 | 1.05 | a NET< CL |
| 18 | 176.75 | 355.53 | 39 | 69 | 56 | 771 | 0.72 | b NET< CL |
| 19 | 185.94 | 373.91 | 3377 | 174 | 106 | 1856 | 1.69 | a |
| 20 | 209.33 | 420.64 | 760 | 125 | 92 | 1485 | 1.47 | a |
| 21 | 238.67 | 479.27 | 8911 | 229 | 106 | 1973 | 1.76 | a |
| 22 | 241.73 | 485.37 | 2863 | 152 | 88 | 1446 | 1.71 | b |
| 23 | 259.03 | 519.95 | 108 | 90 | 72 | 1020 | 1.41 | a |

041051D10.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 24 | 270.18 | 542.23 | 1034 | 127 | 90 | 1300 | 2.12 | a HiResid Wide Pk |
| 25 | 276.36 | 554.57 | 327 | 140 | 111 | 1700 | 2.83 | b HiResid |
| 26 | 295.20 | 592.23 | 5577 | 174 | 74 | 954 | 1.86 | a |
| 27 | 300.27 | 602.36 | 577 | 107 | 79 | 1040 | 1.89 | b |
| 28 | 328.09 | 657.94 | 411 | 106 | 80 | 1087 | 1.96 | a |
| 29 | 338.44 | 678.62 | 2021 | 134 | 82 | 1088 | 2.08 | a |
| 30 | 351.97 | 705.66 | 9644 | 216 | 74 | 888 | 2.10 | a |
| 31 | 387.58 | 776.82 | 55 | 69 | 55 | 596 | 1.49 | a NET< CL |
| 32 | 389.15 | 779.95 | 92 | 59 | 46 | 463 | 1.16 | b |
| 33 | 409.72 | 821.05 | 152 | 81 | 64 | 787 | 1.76 | a |
| 34 | 463.09 | 927.71 | 555 | 93 | 66 | 718 | 2.43 | a |
| 35 | 510.94 | 1023.33 | 1082 | 107 | 69 | 708 | 2.91 | a |
| 36 | 583.36 | 1168.02 | 2928 | 135 | 66 | 676 | 2.71 | a |
| 37 | 609.47 | 1220.21 | 6834 | 180 | 59 | 570 | 2.53 | a HiResid |
| 38 | 665.73 | 1332.63 | 155 | 87 | 69 | 675 | 3.05 | a |
| 39 | 727.56 | 1456.17 | 671 | 85 | 55 | 483 | 2.59 | a |
| 40 | 768.38 | 1537.74 | 730 | 113 | 82 | 761 | 4.41 | a Wide Pk |
| 41 | 785.68 | 1572.32 | 336 | 86 | 64 | 500 | 3.93 | a |
| 42 | 795.04 | 1591.01 | 479 | 82 | 57 | 438 | 3.36 | b |
| 43 | 806.37 | 1613.66 | 280 | 82 | 61 | 479 | 3.74 | c |
| 44 | 835.80 | 1672.47 | 125 | 57 | 43 | 327 | 2.21 | a |
| 45 | 839.79 | 1680.44 | 104 | 76 | 60 | 503 | 3.21 | b |
| 46 | 860.77 | 1722.36 | 373 | 83 | 60 | 469 | 3.62 | a |
| 47 | 911.35 | 1823.42 | 2415 | 123 | 61 | 499 | 3.46 | a |
| 48 | 934.31 | 1869.31 | 375 | 79 | 57 | 400 | 3.95 | a |
| 49 | 968.08 | 1936.80 | 1666 | 124 | 76 | 615 | 4.85 | a HiResid Wide Pk |
| 50 | 1001.06 | 2002.69 | 138 | 56 | 42 | 255 | 2.90 | a |
| 51 | 1120.42 | 2241.20 | 1503 | 101 | 54 | 354 | 3.98 | a |
| 52 | 1155.83 | 2311.95 | 150 | 53 | 38 | 216 | 2.93 | a |
| 53 | 1238.12 | 2476.38 | 540 | 87 | 61 | 408 | 4.53 | a |
| 54 | 1281.49 | 2563.05 | 136 | 68 | 53 | 310 | 4.57 | a |
| 55 | 1377.75 | 2755.39 | 377 | 76 | 54 | 333 | 4.38 | a HiResid |
| 56 | 1406.10 | 2812.04 | 236 | 108 | 85 | 540 | 7.90 | a Wide Pk |
| 57 | 1460.60 | 2920.95 | 442 | 77 | 53 | 315 | 4.55 | a |
| 58 | 1509.84 | 3019.34 | 165 | 68 | 52 | 292 | 4.79 | a |
| 59 | 1585.36 | 3170.26 | 195 | 97 | 77 | 421 | 8.12 | a Wide Pk |
| 60 | 1588.76 | 3177.04 | 127 | 45 | 32 | 152 | 2.93 | b |
| 61 | 1660.64 | 3320.67 | 69 | 48 | 37 | 158 | 4.31 | a |
| 62 | 1729.30 | 3457.87 | 346 | 62 | 40 | 148 | 6.04 | a |
| 63 | 1763.78 | 3526.77 | 1473 | 92 | 42 | 157 | 6.00 | a |
| 64 | 1847.10 | 3693.26 | 219 | 59 | 42 | 153 | 6.49 | a |

041051D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.35 | 382 | 113 | 87 | 351 | 113 | 88 | |
| 2 | 53.19 | 153 | 114 | 91 | 150 | 114 | 92 | |
| 3 | 63.18 | 1136 | 171 | 129 | 1112 | 171 | 130 | |
| 4 | 74.64 | 1112 | 223 | 175 | 1082 | 224 | 176 | |
| 5 | 77.09 | 4998 | 269 | 188 | 4963 | 269 | 189 | |
| 7 | 83.95 | 865 | 160 | 122 | 857 | 160 | 122 | |
| 8 | 87.10 | 428 | 198 | 159 | 414 | 198 | 160 | |
| 9 | 92.87 | 3117 | 205 | 141 | 3063 | 205 | 142 | |
| 16 | 163.36 | 76 | 124 | 101 | 74 | 124 | 101 | NET<CL |
| 19 | 185.94 | 3377 | 174 | 106 | 3332 | 174 | 107 | |
| 21 | 238.67 | 8911 | 229 | 106 | 8883 | 229 | 106 | |
| 22 | 241.73 | 2863 | 152 | 88 | 2836 | 152 | 89 | |
| 24 | 270.18 | 1034 | 127 | 90 | 1031 | 127 | 90 | |
| 26 | 295.20 | 5577 | 174 | 74 | 5524 | 174 | 75 | |
| 28 | 328.09 | 411 | 106 | 80 | 408 | 106 | 81 | |
| 29 | 338.44 | 2021 | 135 | 82 | 2018 | 135 | 82 | |
| 30 | 351.97 | 9644 | 216 | 74 | 9549 | 216 | 76 | |
| 35 | 510.94 | 1082 | 107 | 69 | 933 | 108 | 73 | |
| 36 | 583.36 | 2928 | 135 | 66 | 2916 | 135 | 67 | |
| 37 | 609.47 | 6834 | 180 | 59 | 6729 | 181 | 62 | |
| 39 | 727.56 | 671 | 85 | 55 | 668 | 85 | 55 | |
| 40 | 768.38 | 730 | 113 | 82 | 721 | 113 | 82 | |
| 47 | 911.35 | 2415 | 123 | 61 | 2405 | 123 | 61 | |
| 48 | 934.31 | 375 | 79 | 57 | 371 | 80 | 57 | |
| 51 | 1120.42 | 1503 | 101 | 54 | 1480 | 102 | 55 | |
| 53 | 1238.12 | 540 | 87 | 61 | 532 | 87 | 61 | |
| 55 | 1377.75 | 377 | 76 | 54 | 373 | 76 | 54 | |
| 57 | 1460.60 | 442 | 77 | 53 | 398 | 78 | 55 | |
| 62 | 1729.30 | 346 | 62 | 40 | 343 | 62 | 41 | |
| 63 | 1763.78 | 1473 | 92 | 42 | 1452 | 92 | 43 | |
| 64 | 1847.10 | 219 | 59 | 42 | 216 | 60 | 43 | |

041051D10.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-18 GS040601-6

Code: 041051D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 06/27/2004 20:59:21 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time | 1.28e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.16e+002 g | Real Time | 1864 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041051D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10) (Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004

Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | | ENERGY (keV) | E T | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|-----------------|-------------|--------------------------|----------|----------|-------------------|-------------------|
| Th-234 | Average:x | 5.98E+01 | +- 3.71E+00 | | . | . | . | 3.92E+13 |
| | 63.29 | 4.53E+01 | +- 6.97E+00 | | 1.07E+01 | 5.28E+00 | 3.92E+13 | |
| | 92.50 | 6.55E+01 | +- 4.39E+00 | | 6.14E+00 | 3.04E+00 | 3.92E+13 | |
| Eu-155 | 105.31 | 6.83E-01 | +- 7.32E-01 | | 1.20E+00 | 5.94E-01 | 4.35E+04 | |
| Pb-212 | Average:x | 2.68E+01 | +- 6.82E-01 | | . | . | . | 1.67E+04 |
| | 115.18 | 1.18E+01 | +- 1.45E+01 | | 2.39E+01 | 1.17E+01 | 1.67E+04 | |
| | 238.63 | 2.68E+01 | +- 6.89E-01 | | 6.50E-01 | 3.21E-01 | 1.67E+04 | |
| | 300.09 | 2.78E+01 | +- 5.15E+00 | | 7.70E+00 | 3.78E+00 | 1.67E+04 | |
| U-235 | 143.76 | 3.42E+00 | +- 1.32E+00 | | 2.12E+00 | 1.05E+00 | 6.17E+12 | |
| | 185.72 | I.D. | | | . | . | . | 6.17E+12 |
| Tl-208 | Average:x | 8.85E+00 | +- 4.00E-01 | | . | . | . | 1.27E+14 |
| | 277.36 | 7.24E+00 | +- 3.11E+00 | | 5.00E+00 | 2.47E+00 | 1.27E+14 | |
| | 583.14 | 8.82E+00 | +- 4.09E-01 | | 4.13E-01 | 2.02E-01 | 1.27E+14 | |
| | 860.47 | 1.05E+01 | +- 2.33E+00 | | 3.46E+00 | 1.69E+00 | 1.27E+14 | |
| Pb-214 | Average:x | 4.32E+01 | +- 7.95E-01 | | . | . | . | 1.40E+07 |
| | 295.22 | 4.23E+01 | +- 1.34E+00 | | 1.17E+00 | 5.74E-01 | 1.40E+07 | |
| | 351.99 | 4.37E+01 | +- 9.90E-01 | | 7.12E-01 | 3.50E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 3.41E+01 | +- 1.22E+00 | | . | . | . | 5.04E+04 |
| | 338.40 | 3.00E+01 | +- 2.00E+00 | | 2.49E+00 | 1.22E+00 | 5.04E+04 | |
| | 911.07 | 3.49E+01 | +- 1.79E+00 | | 1.82E+00 | 8.89E-01 | 5.04E+04 | |
| | 968.90 | 4.14E+01 | +- 3.07E+00 | | 3.86E+00 | 1.90E+00 | 5.04E+04 | |
| Bi-214 | Average:x | 3.91E+01 | +- 9.78E-01 | | . | . | . | 1.40E+07 |
| | 609.32 | 3.87E+01 | +- 1.04E+00 | | 7.28E-01 | 3.56E-01 | 1.40E+07 | |
| | 1120.28 | 4.26E+01 | +- 2.92E+00 | | 3.22E+00 | 1.57E+00 | 1.40E+07 | |

041051D10.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|----------|--------------------------|-------------|-----------|-------------------|-------------------|
| Bi-212 | 727.17 | 3.27E+01 | +- 4.17E+00 | 5.57E+00 | 2.72E+00 | 1.67E+04 | |
| Mn-54 | 834.81 | 4.81E-01 | +- 2.19E-01 | 3.41E-01 | 1.65E-01 | 7.49E+03 | |
| Pa-234m | 1001.03 | 9.27E+01 | +- 3.74E+01 | 5.76E+01 | 2.79E+01 | 3.92E+13 | |
| Eu-152 | 1408.08 | 5.94E+00 | +- 2.72E+00 | 4.36E+00 | 2.15E+00 | 1.17E+05 | |
| K-40 | 1460.75 | 1.95E+01 | +- 3.80E+00 | 5.50E+00 | 2.68E+00 | 1.12E+13 | |
| Am-241 | 59.54 | N | 1.61E+00 | +- 6.73E-01 | 1.08E+00b | 5.35E-01 | 3.80E+06 |
| Co-57 | 122.07 | N | 1.78E-01 | +- 1.61E-01 | 2.74E-01 | 1.35E-01 | 6.48E+03 |
| Ce-144 | 133.53 | N | 2.12E-01 | +- 1.24E+00 | 2.06E+00b | 1.02E+00 | 6.82E+03 |
| Ce-139 | 165.85 | N | 2.25E-01 | +- 2.04E-01 | 3.46E-01 | 1.71E-01 | 3.30E+03 |
| Th-227 | 236.00 | N | 1.87E+01 | +- 3.24E+01 | 5.32E+01P | 2.66E+01 | 1.90E+05 |
| Cr-51 | 320.07 | N | 3.52E+00 | +- 4.82E+00 | 8.24E+00 | 4.04E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 1.86E+01 | +- 1.64E+01 | 2.68E+01 | 1.31E+01 | 1.93E+02 |
| Sb-125 | 427.95 | N | 7.22E-01 | +- 5.27E-01 | 8.55E-01 | 4.18E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 6.19E-01 | +- 2.80E+00 | 4.69E+00 | 2.29E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N | 1.50E+00 | +- 1.01E+00 | 8.45E+00P | 4.22E+00 | 1.44E+03 |
| Cs-134 | 604.66 | N | 6.83E-01 | +- 2.94E+00 | 4.84E+00P | 2.42E+00 | 1.81E+04 |
| Ru-106 | 621.84 | N | 1.52E-02 | +- 1.97E+00 | 3.32E+00 | 1.62E+00 | 8.84E+03 |
| Ag-110M | 657.75 | N | 4.64E-02 | +- 3.57E-01 | 5.94E-01R | 2.92E-01 | 6.00E+03 |
| Cs-137 | 661.62 | N | 1.18E-01 | +- 3.68E-01 | 6.21E-01R | 3.06E-01 | 2.64E+05 |
| Nb-94 | 702.50 | N | 2.69E-01 | +- 2.19E-01 | 3.56E-01 | 1.74E-01 | 1.78E+08 |
| Nb-95 | 765.82 | N | 2.29E+00 | +- 5.01E-01 | 7.49E-01 | 3.67E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 4.14E-01 | +- 5.14E-01 | 8.91E-01r | 4.38E-01 | 1.70E+03 |
| Sc-46 | 889.26 | N | 1.26E-01 | +- 3.45E-01 | 5.89E-01 | 2.87E-01 | 2.01E+03 |
| Eu-154 | 1004.80 | N | 1.77E+00 | +- 1.92E+00 | 3.35E+00r | 1.64E+00 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 2.58E-01 | +- 1.06E+00 | 1.80E+00 | 8.78E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 4.08E+00 | +- 1.19E+00 | 2.20E+00R | 1.09E+00 | 5.85E+03 |
| Co-56 | 1238.28 | N | 7.35E+00 | +- 8.68E-01 | 1.10E+00 | 5.34E-01 | 1.86E+03 |
| Na-22 | 1274.54 | N | 1.41E-01 | +- 4.26E-01 | 7.03E-01R | 3.44E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N | 7.65E-02 | +- 2.90E-01 | 4.95E-01 | 2.41E-01 | 4.62E+04 |
| Al-26 | 1808.65 | N | 1.29E-02 | +- 2.71E-01 | 4.63E-01 | 2.23E-01 | 6.31E+09 |

MEASURED TOTAL: 4.18E+02 +- 1.15E+02 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.35 | 94.96 | 351 | 113 | 88 | 1607 | 1.04 | Unknown |
| 2 | 53.19 | 108.64 | 150 | 114 | 92 | 1763 | 0.96 | Unknown |
| 4 | 74.64 | 151.50 | 1082 | 224 | 176 | 6060 | 0.84 | Unknown |
| 5 | 77.09 | 156.40 | 4963 | 269 | 189 | 6174 | 1.25 | Unknown |
| 6 | 80.76 | 163.73 | 265 | 141 | 113 | 2516 | 2.51 | Unknown |
| 7 | 83.95 | 170.09 | 857 | 160 | 122 | 2752 | 1.30 | Unknown |
| 8 | 87.10 | 176.39 | 414 | 198 | 160 | 4696 | 0.44 | Unknown |
| 10 | 99.16 | 200.50 | 128 | 216 | 176 | 3831 | 0.53 | Deleted |
| 13 | 128.89 | 259.90 | 453 | 125 | 97 | 1736 | 1.39 | Unknown |
| 15 | 153.91 | 309.90 | 244 | 131 | 104 | 1891 | 1.48 | Unknown |

041051D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 16 | 163.36 | 328.78 | 74 | 124 | 101 | 1774 | 1.50 | Deleted |
| 17 | 172.61 | 347.26 | 48 | 91 | 74 | 1156 | 1.05 | Deleted |
| 18 | 176.75 | 355.53 | 39 | 69 | 56 | 771 | 0.72 | Deleted |
| 20 | 209.33 | 420.64 | 760 | 125 | 92 | 1485 | 1.47 | Unknown |
| 22 | 241.73 | 485.37 | 2836 | 152 | 89 | 1446 | 1.71 | Unknown |
| 23 | 259.03 | 519.95 | 108 | 90 | 72 | 1020 | 1.41 | 1281DEsc |
| 24 | 270.18 | 542.23 | 1031 | 127 | 90 | 1300 | 2.12 | Unknown |
| 28 | 328.09 | 657.94 | 408 | 106 | 81 | 1087 | 1.96 | Unknown |
| 31 | 387.58 | 776.82 | 55 | 69 | 55 | 596 | 1.49 | Deleted |
| 32 | 389.15 | 779.95 | 92 | 59 | 46 | 463 | 1.16 | Unknown |
| 33 | 409.72 | 821.05 | 152 | 81 | 64 | 787 | 1.76 | Unknown |
| 34 | 463.09 | 927.71 | 555 | 93 | 66 | 718 | 2.43 | Unknown |
| 35 | 510.94 | 1023.33 | 933 | 108 | 73 | 708 | 2.91 | Unknown |
| 38 | 665.73 | 1332.63 | 155 | 87 | 69 | 675 | 3.05 | Unknown |
| 40 | 768.38 | 1537.74 | 721 | 113 | 82 | 761 | 4.41 | Unknown |
| 41 | 785.68 | 1572.32 | 336 | 86 | 64 | 500 | 3.93 | Unknown |
| 42 | 795.04 | 1591.01 | 479 | 82 | 57 | 438 | 3.36 | Unknown |
| 43 | 806.37 | 1613.66 | 280 | 82 | 62 | 479 | 3.74 | Unknown |
| 45 | 839.79 | 1680.44 | 104 | 76 | 60 | 503 | 3.21 | Unknown |
| 48 | 934.31 | 1869.31 | 371 | 80 | 57 | 400 | 3.95 | Unknown |
| 52 | 1155.83 | 2311.95 | 150 | 53 | 38 | 216 | 2.93 | Unknown |
| 53 | 1238.12 | 2476.38 | 532 | 87 | 61 | 408 | 4.53 | Unknown |
| 54 | 1281.49 | 2563.05 | 136 | 68 | 53 | 310 | 4.57 | Unknown |
| 55 | 1377.75 | 2755.39 | 373 | 76 | 54 | 333 | 4.38 | Unknown |
| 58 | 1509.84 | 3019.34 | 165 | 68 | 52 | 292 | 4.79 | Unknown |
| 59 | 1585.36 | 3170.26 | 195 | 97 | 77 | 421 | 8.12 | Unknown |
| 60 | 1588.76 | 3177.04 | 127 | 45 | 32 | 152 | 2.93 | Unknown |
| 61 | 1660.64 | 3320.67 | 69 | 48 | 37 | 158 | 4.31 | Unknown |
| 62 | 1729.30 | 3457.87 | 343 | 62 | 41 | 148 | 6.04 | Unknown |
| 63 | 1763.78 | 3526.77 | 1452 | 92 | 43 | 157 | 6.00 | Unknown |
| 64 | 1847.10 | 3693.26 | 216 | 60 | 43 | 153 | 6.49 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-19 GS040601-6

Code: 041128D02A

 Sampling Start: 05/05/2004 12:00:00 | Counting Start: 07/01/2004 08:16:06
 Sampling Stop: 05/05/2004 12:00:00 | Decay Time. 1.36E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
 Sample Size 1.24E+002 g | Real Time 1820 Sec
 Collection Efficiency 1.0000 | Spc. File 041128D02.SPC

Detector #: 2 (Detector 2)

Energy(keV) = -0.75 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 43.57 | 88.61 | 27 | 26 | 19 | 94 | 0.41 | a |
| 2 | 63.32 | 128.10 | 58 | 40 | 30 | 183 | 0.79 | a |
| 3 | 74.69 | 150.83 | 205 | 53 | 36 | 243 | 0.98 | a |
| 4 | 76.98 | 155.40 | 355 | 54 | 32 | 203 | 0.86 | b |
| 5 | 84.00 | 169.44 | 57 | 51 | 40 | 275 | 1.20 | a |
| 6 | 87.09 | 175.62 | 154 | 50 | 36 | 236 | 1.04 | b |
| 7 | 89.74 | 180.90 | 89 | 42 | 31 | 197 | 0.75 | c |
| 8 | 92.71 | 186.85 | 239 | 58 | 40 | 275 | 1.10 | d |
| 9 | 105.75 | 212.92 | 46 | 39 | 30 | 166 | 1.05 | a |
| 10 | 129.09 | 259.58 | 47 | 46 | 36 | 226 | 1.12 | a |
| 11 | 143.87 | 289.12 | 41 | 41 | 32 | 188 | 1.03 | a |
| 12 | 185.92 | 373.19 | 254 | 49 | 31 | 174 | 0.91 | a |
| 13 | 209.06 | 419.44 | 95 | 36 | 25 | 119 | 1.00 | a |
| 14 | 238.57 | 478.44 | 898 | 68 | 26 | 123 | 0.99 | a |
| 15 | 241.74 | 484.77 | 245 | 50 | 32 | 164 | 1.32 | b |
| 16 | 270.08 | 541.43 | 101 | 42 | 30 | 132 | 1.48 | a |
| 17 | 277.59 | 556.43 | 51 | 25 | 17 | 55 | 0.89 | a |
| 18 | 295.14 | 591.52 | 390 | 47 | 21 | 85 | 1.01 | a |
| 19 | 299.92 | 601.08 | 48 | 32 | 24 | 99 | 1.20 | b |
| 20 | 328.04 | 657.31 | 49 | 31 | 23 | 90 | 1.20 | a |
| 21 | 338.20 | 677.62 | 180 | 37 | 21 | 79 | 1.02 | a |
| 22 | 351.79 | 704.78 | 714 | 60 | 23 | 88 | 1.09 | a |
| 23 | 409.70 | 820.55 | 22 | 21 | 15 | 48 | 0.84 | a |
| 24 | 462.97 | 927.04 | 75 | 31 | 21 | 73 | 1.63 | a |

041128D02.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 510.59 | 1022.24 | 77 | 27 | 17 | 53 | 1.36 | a |
| 26 | 583.14 | 1167.28 | 272 | 38 | 16 | 44 | 1.39 | a |
| 27 | 609.24 | 1219.45 | 490 | 48 | 15 | 39 | 1.43 | a |
| 28 | 727.11 | 1455.08 | 71 | 23 | 13 | 30 | 1.34 | a |
| 29 | 794.98 | 1590.76 | 32 | 16 | 10 | 19 | 1.08 | a |
| 30 | 911.24 | 1823.18 | 210 | 33 | 13 | 29 | 1.75 | a |
| 31 | 964.76 | 1930.18 | 40 | 18 | 10 | 20 | 1.68 | a |
| 32 | 968.83 | 1938.33 | 126 | 26 | 10 | 20 | 1.69 | b |
| 33 | 1120.38 | 2241.28 | 87 | 24 | 12 | 24 | 1.90 | a |
| 34 | 1238.10 | 2476.63 | 46 | 21 | 14 | 32 | 2.24 | a |
| 35 | 1460.86 | 2921.94 | 228 | 32 | 9 | 14 | 2.06 | a |
| 36 | 1764.64 | 3529.23 | 64 | 17 | 5 | 4 | 2.07 | a |

041128D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 2 | 63.32 | 58 | 40 | 30 | 52 | 40 | 30 | |
| 3 | 74.69 | 205 | 53 | 36 | 201 | 53 | 37 | |
| 4 | 76.98 | 355 | 54 | 32 | 351 | 54 | 32 | |
| 5 | 84.00 | 57 | 51 | 40 | 56 | 51 | 40 | |
| 6 | 87.09 | 154 | 50 | 36 | 152 | 50 | 36 | |
| 7 | 89.74 | 89 | 42 | 31 | 88 | 42 | 31 | |
| 8 | 92.71 | 239 | 58 | 40 | 226 | 58 | 41 | |
| 10 | 129.09 | 47 | 46 | 36 | 46 | 46 | 37 | |
| 11 | 143.87 | 41 | 41 | 32 | 39 | 41 | 32 | |
| 12 | 185.92 | 254 | 49 | 31 | 246 | 49 | 31 | |
| 14 | 238.57 | 898 | 68 | 26 | 891 | 68 | 26 | |
| 18 | 295.14 | 390 | 47 | 21 | 387 | 48 | 22 | |
| 21 | 338.20 | 180 | 37 | 21 | 178 | 37 | 21 | |
| 22 | 351.79 | 714 | 60 | 23 | 710 | 60 | 23 | |
| 25 | 510.59 | 77 | 27 | 17 | 36 | 28 | 21 | |
| 26 | 583.14 | 272 | 38 | 16 | 268 | 38 | 16 | |
| 27 | 609.24 | 490 | 48 | 15 | 485 | 48 | 16 | |
| 30 | 911.24 | 210 | 33 | 13 | 208 | 33 | 13 | |
| 32 | 968.83 | 126 | 26 | 10 | 124 | 26 | 11 | |
| 35 | 1460.86 | 228 | 32 | 9 | 222 | 32 | 10 | |
| 36 | 1764.64 | 64 | 17 | 5 | 63 | 17 | 5 | |

041128D02.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-19 GS040601-6

Code: 041128D02A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/05/2004 12:00:00 | Counting Start: | 07/01/2004 08:16:06 |
| Sampling Stop: | 05/05/2004 12:00:00 | Decay Time. | 1.36e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.24e+002 g | Real Time | 1820 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041128D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh11).EFF (Geo 11 Eff Cal)
 $\text{Eff.} = 1/[8.73E-04 * \text{En}^{-4.04E+00} + 6.76E+01 * \text{En}^{8.33E-01}]$ 06/01/2004

 Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------|--------------|-----------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | Average:x | 1.12E+01 | +- | 2.71E+00 | | | 3.35E+00 | | 3.92E+13 |
| | 63.29 | 1.11E+01 | +- | 8.43E+00 | 1.35E+01 | 6.46E+00 | 2.01E+00 | 3.18E-01 | 3.92E+13 |
| | 92.50 | 1.12E+01 | +- | 2.86E+00 | 4.16E+00 | 2.01E+00 | 5.56E-01 | 4.35E-01 | 3.92E+13 |
| Eu-155 | 105.31 | 4.89E-01 | +- | 4.13E-01 | 6.65E-01 | 3.18E-01 | 3.18E-01 | 4.35E+04 | |
| U-235 | 143.76 | 6.69E-01 | +- | 7.10E-01 | 1.16E+00 | 5.56E-01 | 5.56E-01 | 6.17E+12 | |
| | 185.72 | I.D. | | | | | | 6.17E+12 | |
| Pb-212 | Average:x | 5.46E+00 | +- | 4.12E-01 | | | 1.62E-01 | 1.62E-01 | 1.67E+04 |
| | 238.63 | 5.47E+00 | +- | 4.16E-01 | 3.40E-01 | 1.62E-01 | 2.35E+00 | 2.35E+00 | 1.67E+04 |
| | 300.09 | 4.64E+00 | +- | 3.15E+00 | 4.96E+00 | 2.35E+00 | 1.01E-01 | 1.01E-01 | 1.67E+04 |
| Tl-208 | Average:x | 1.68E+00 | +- | 2.31E-01 | | | 7.40E-01 | 7.40E-01 | 1.27E+14 |
| | 277.36 | 2.30E+00 | +- | 1.10E+00 | 1.60E+00 | 1.27E+14 | 1.60E+00 | 1.60E+00 | |
| | 583.14 | 1.65E+00 | +- | 2.37E-01 | 2.20E-01 | 1.27E+14 | 2.20E-01 | 2.20E-01 | |
| Pb-214 | Average:x | 6.36E+00 | +- | 4.45E-01 | | | 3.44E-01 | 3.44E-01 | 1.40E+07 |
| | 295.22 | 6.00E+00 | +- | 7.39E-01 | 7.31E-01 | 1.40E+07 | 7.31E-01 | 7.31E-01 | |
| | 351.99 | 6.57E+00 | +- | 5.57E-01 | 4.52E-01 | 1.40E+07 | 4.52E-01 | 4.52E-01 | |
| Ra-228 | Average:x | 5.96E+00 | +- | 6.43E-01 | | | 2.13E-01 | 2.13E-01 | 5.04E+04 |
| | 338.40 | 5.35E+00 | +- | 1.11E+00 | 1.35E+00 | 5.04E+04 | 1.35E+00 | 1.35E+00 | |
| | 911.07 | 6.22E+00 | +- | 9.82E-01 | 8.61E-01 | 5.04E+04 | 8.61E-01 | 8.61E-01 | |
| | 968.90 | 6.36E+00 | +- | 1.32E+00 | 1.24E+00 | 5.04E+04 | 1.24E+00 | 1.24E+00 | |
| Sb-125 | Average:x | 2.79E-01 | +- | 3.01E-01 | | | 8.97E-01 | 8.97E-01 | 2.43E+04 |
| | 463.51 | 3.18E+00 | +- | 1.32E+00 | 1.91E+00 | 2.43E+04 | 1.91E+00 | 1.91E+00 | |
| | 427.95 | N | 1.19E-01 | +- | 3.09E-01 | 5.28E-01 | 2.43E-01 | 2.43E-01 | 2.43E+04 |
| Bi-214 | Average:x | 5.62E+00 | +- | 5.23E-01 | | | 1.85E-01 | 1.85E-01 | 1.40E+07 |
| | 609.32 | 5.70E+00 | +- | 5.64E-01 | 4.02E-01 | 1.40E+07 | 4.02E-01 | 4.02E-01 | |
| | 1120.28 | 5.15E+00 | +- | 1.40E+00 | 1.58E+00 | 1.40E+07 | 7.11E-01 | 7.11E-01 | |

041128D02.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|-----------|-------------------|-------------------|
| Bi-212 | 727.17 | 7.16E+00 | +- 2.31E+00 | 2.84E+00 | 1.28E+00 | 1.67E+04 | |
| Cs-134 | Average:x | 7.38E-02 | +- 8.46E-02 | | | 1.81E+04 | |
| | 795.76 | 2.69E-01 | +- 1.37E-01 | 1.87E-01 | 8.22E-02 | 1.81E+04 | |
| | 604.66 | N-4.64E-02 | +- 1.08E-01 | 2.01E-01B | 9.25E-02 | 1.81E+04 | |
| Co-56 | 1238.28 | 1.11E+00 | +- 5.13E-01 | 7.18E-01 | 3.27E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 2.27E+01 | +- 3.28E+00 | 2.29E+00 | 1.01E+00 | 1.12E+13 | |
| Am-241 | 59.54 | N-3.06E-01 | +- 8.27E-01 | 1.47E+00 | 6.97E-01 | 3.80E+06 | |
| Co-57 | 122.07 | N 4.81E-03 | +- 8.26E-02 | 1.42E-01 | 6.76E-02 | 6.48E+03 | |
| Ce-144 | 133.53 | N 2.32E-01 | +- 6.62E-01 | 1.12E+00 | 5.33E-01 | 6.82E+03 | |
| Ce-139 | 165.85 | N-5.63E-02 | +- 1.01E-01 | 1.81E-01 | 8.62E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N 4.53E+00 | +- 2.10E+01 | 3.45E+01P | 1.72E+01 | 1.90E+05 | |
| Cr-51 | 320.07 | N-1.84E+00 | +- 3.09E+00 | 5.69E+00 | 2.67E+00 | 6.65E+02 | |
| I-131 | 364.48 | N-1.26E+00 | +- 1.50E+01 | 2.64E+01 | 1.24E+01 | 1.93E+02 | |
| Be-7 | 477.56 | N-7.68E-02 | +- 1.80E+00 | 3.22E+00 | 1.49E+00 | 1.28E+03 | |
| Sb-124 | 602.71 | N-4.20E-02 | +- 1.95E-01 | 3.56E-01 | 1.64E-01 | 1.44E+03 | |
| Ru-106 | 621.84 | N 1.75E+00 | +- 1.13E+00 | 1.68E+00 | 7.54E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N-3.59E-02 | +- 1.26E-01 | 2.33E-01 | 1.07E-01 | 6.00E+03 | |
| Cs-137 | 661.62 | N 4.10E-02 | +- 1.35E-01 | 2.34E-01 | 1.08E-01 | 2.64E+05 | |
| Nb-94 | 702.50 | N-2.18E-02 | +- 1.25E-01 | 2.27E-01 | 1.05E-01 | 1.78E+08 | |
| Nb-95 | 765.82 | N-1.44E-01 | +- 2.65E-01 | 4.89E-01 | 2.28E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-1.19E-01 | +- 1.93E-01 | 3.73E-01 | 1.70E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N 7.90E-02 | +- 1.40E-01 | 2.36E-01 | 1.07E-01 | 7.49E+03 | |
| Sc-46 | 889.26 | N-8.30E-02 | +- 1.94E-01 | 3.68E-01 | 1.68E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 2.49E+01 | +- 2.04E+01 | 3.11E+01 | 1.37E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N-6.46E-01 | +- 6.78E-01 | 1.38E+00 | 6.26E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N-1.31E-01 | +- 5.52E-01 | 1.04E+00 | 4.68E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N 2.08E-02 | +- 7.55E-01 | 1.30E+00P | 6.20E-01 | 5.85E+03 | |
| Na-22 | 1274.54 | N 8.34E-02 | +- 1.38E-01 | 2.34E-01 | 1.03E-01 | 2.28E+04 | |
| Co-60 | 1332.51 | N-1.06E-02 | +- 1.14E-01 | 2.19E-01 | 9.54E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 4.17E-01 | +- 7.07E-01 | 1.20E+00 | 5.29E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N 4.47E-03 | +- 8.67E-02 | 1.77E-01 | 7.02E-02 | 6.31E+09 | |

MEASURED TOTAL: 1.01E+02 +- 5.77E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 43.57 | 88.61 | 27 | 26 | 19 | 94 | 0.41 | Unknown |
| 3 | 74.69 | 150.83 | 201 | 53 | 37 | 243 | 0.98 | Unknown |
| 4 | 76.98 | 155.40 | 351 | 54 | 32 | 203 | 0.86 | Unknown |
| 5 | 84.00 | 169.44 | 56 | 51 | 40 | 275 | 1.20 | Unknown |
| 6 | 87.09 | 175.62 | 152 | 50 | 36 | 236 | 1.04 | Unknown |
| 7 | 89.74 | 180.90 | 88 | 42 | 31 | 197 | 0.75 | Unknown |
| 10 | 129.09 | 259.58 | 46 | 46 | 37 | 226 | 1.12 | Unknown |
| 13 | 209.06 | 419.44 | 95 | 36 | 25 | 119 | 1.00 | Unknown |
| 15 | 241.74 | 484.77 | 245 | 50 | 32 | 164 | 1.32 | Unknown |

041128D02.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 16 | 270.08 | 541.43 | 101 | 42 | 30 | 132 | 1.48 | Unknown |
| 20 | 328.04 | 657.31 | 49 | 31 | 23 | 90 | 1.20 | Unknown |
| 23 | 409.70 | 820.55 | 22 | 21 | 15 | 48 | 0.84 | Unknown |
| 25 | 510.59 | 1022.24 | 36 | 28 | 21 | 53 | 1.36 | Unknown |
| 31 | 964.76 | 1930.18 | 40 | 18 | 10 | 20 | 1.68 | Unknown |
| 36 | 1764.64 | 3529.23 | 63 | 17 | 5 | 4 | 2.07 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-20 GS040601-7

Code: 041076D02A

 Sampling Start: 05/04/2004 12:00:00 | Counting Start: 06/26/2004 12:41:22
 Sampling Stop: 05/04/2004 12:00:00 | Decay Time. 1.27E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
 Sample Size 4.17E+002 g | Real Time 1808 Sec
 Collection Efficiency 1.0000 | Spc. File 041076D02.SPC

 Detector #: 2 (Detector 2)
 Energy(keV) = -0.73 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004
 FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
 Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
 PEAK SEARCH RESULTS
 =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 66.78 | 135.00 | 13 | 19 | 15 | 58 | 0.37 | a NET< CL |
| 2 | 69.11 | 139.65 | 20 | 29 | 23 | 117 | 0.60 | b NET< CL |
| 3 | 74.61 | 150.64 | 101 | 38 | 27 | 142 | 0.87 | a |
| 4 | 76.97 | 155.37 | 192 | 46 | 30 | 170 | 0.92 | b |
| 5 | 87.22 | 175.86 | 61 | 36 | 27 | 142 | 0.78 | a |
| 6 | 89.79 | 180.99 | 42 | 35 | 27 | 142 | 0.86 | b |
| 7 | 92.90 | 187.21 | 108 | 42 | 30 | 170 | 1.02 | c |
| 8 | 129.21 | 259.83 | 18 | 22 | 17 | 69 | 0.42 | a |
| 9 | 186.02 | 373.43 | 142 | 38 | 25 | 112 | 1.04 | a |
| 10 | 209.10 | 419.57 | 52 | 24 | 15 | 58 | 0.54 | a |
| 11 | 238.58 | 478.53 | 475 | 51 | 22 | 90 | 1.03 | a |
| 12 | 241.94 | 485.24 | 147 | 39 | 25 | 105 | 1.06 | b |
| 13 | 295.16 | 591.65 | 244 | 39 | 20 | 73 | 0.90 | a |
| 14 | 300.14 | 601.62 | 25 | 29 | 22 | 85 | 1.19 | b |
| 15 | 327.73 | 656.79 | 27 | 21 | 15 | 46 | 0.80 | a |
| 16 | 338.19 | 677.71 | 96 | 29 | 18 | 60 | 0.97 | a |
| 17 | 351.82 | 704.96 | 500 | 48 | 15 | 40 | 1.16 | a |
| 18 | 462.90 | 927.07 | 30 | 19 | 13 | 33 | 1.10 | a |
| 19 | 510.87 | 1023.00 | 78 | 36 | 26 | 84 | 2.50 | a Wide Pk |
| 20 | 583.10 | 1167.43 | 130 | 30 | 15 | 42 | 1.52 | a |
| 21 | 609.31 | 1219.83 | 311 | 39 | 14 | 36 | 1.50 | a |
| 22 | 661.47 | 1324.13 | 59 | 23 | 15 | 33 | 1.86 | a |
| 23 | 727.34 | 1455.86 | 26 | 16 | 10 | 19 | 1.15 | a |
| 24 | 768.21 | 1537.58 | 26 | 18 | 12 | 30 | 1.07 | a |

041076D02.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 911.44 | 1823.97 | 106 | 23 | 8 | 13 | 1.60 | a |
| 26 | 968.85 | 1938.77 | 44 | 18 | 10 | 21 | 1.37 | a |
| 27 | 1120.18 | 2241.37 | 74 | 21 | 10 | 17 | 1.94 | a |
| 28 | 1238.08 | 2477.12 | 24 | 15 | 10 | 20 | 1.43 | a |
| 29 | 1460.74 | 2922.37 | 190 | 29 | 7 | 8 | 2.20 | a |
| 30 | 1764.55 | 3529.87 | 37 | 13 | 5 | 4 | 1.97 | a |

041076D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 66.78 | 13 | 19 | 15 | 9 | 19 | 15 | NET<CL |
| 3 | 74.61 | 101 | 38 | 27 | 96 | 38 | 27 | |
| 4 | 76.97 | 192 | 46 | 30 | 188 | 46 | 31 | |
| 5 | 87.22 | 61 | 36 | 27 | 59 | 36 | 27 | |
| 6 | 89.79 | 42 | 35 | 27 | 41 | 35 | 27 | |
| 7 | 92.90 | 108 | 42 | 30 | 95 | 43 | 31 | |
| 8 | 129.21 | 18 | 22 | 17 | 17 | 22 | 17 | |
| 9 | 186.02 | 142 | 38 | 25 | 134 | 38 | 25 | |
| 11 | 238.58 | 475 | 51 | 22 | 468 | 51 | 23 | |
| 13 | 295.16 | 244 | 39 | 20 | 241 | 40 | 21 | |
| 16 | 338.19 | 96 | 29 | 18 | 94 | 30 | 18 | |
| 17 | 351.82 | 500 | 48 | 15 | 496 | 49 | 16 | |
| 19 | 510.87 | 78 | 36 | 26 | 37 | 36 | 28 | |
| 20 | 583.10 | 130 | 30 | 15 | 126 | 30 | 16 | |
| 21 | 609.31 | 311 | 39 | 14 | 307 | 40 | 15 | |
| 25 | 911.44 | 106 | 23 | 8 | 104 | 23 | 9 | |
| 26 | 968.85 | 44 | 18 | 10 | 42 | 18 | 10 | |
| 29 | 1460.74 | 190 | 29 | 7 | 184 | 29 | 8 | |
| 30 | 1764.55 | 37 | 13 | 5 | 37 | 13 | 5 | |

041076D02.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0405096-20 GS040601-7

Code: 041076D02A

| | | | |
|--------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/04/2004 12:00:00 | Counting Start: | 06/26/2004 12:41:22 |
| Sampling Stop: | 05/04/2004 12:00:00 | Decay Time. | 1.27e+003 Hrs |
| Buildup Time. | 0.00e+000 Hrs | Live Time . | 1800 Sec |
| Sample Size . | 4.17e+002 g | Real Time . | 1808 Sec |
| Collection Efficiency . | 1.0000 | Spectrum File . | 041076D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[5.36E-04*En^-4.56E+00 + 1.37E+02*En^7.41E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|-----------------------|-----------|----------------|----------------|
| Th-234 | 92.50 | 3.16E+00 | +- 1.42E+00 | 2.16E+00 | 1.04E+00 | 3.92E+13 | |
| U-235 | 143.76 | N 4.90E-02 | +- 3.67E-01 | 6.30E-01 | 2.99E-01 | 6.17E+12 | |
| | 185.72 | I.D. | | | | 6.17E+12 | |
| Pb-212 | Average:x | 1.96E+00 | +- 2.14E-01 | | | 1.67E+04 | |
| | 238.63 | 1.96E+00 | +- 2.15E-01 | 2.02E-01 | 9.51E-02 | 1.67E+04 | |
| | 300.09 | 1.61E+00 | +- 1.89E+00 | 3.10E+00 | 1.46E+00 | 1.67E+04 | |
| Pb-214 | Average:x | 2.87E+00 | +- 2.43E-01 | | | 1.40E+07 | |
| | 295.22 | 2.51E+00 | +- 4.17E-01 | 4.61E-01 | 2.16E-01 | 1.40E+07 | |
| | 351.99 | 3.05E+00 | +- 2.98E-01 | 2.12E-01 | 9.75E-02 | 1.40E+07 | |
| Ra-228 | Average:x | 1.73E+00 | +- 2.92E-01 | | | 5.04E+04 | |
| | 338.40 | 1.88E+00 | +- 5.93E-01 | 7.93E-01 | 3.69E-01 | 5.04E+04 | |
| | 911.07 | 1.89E+00 | +- 4.18E-01 | 3.71E-01 | 1.61E-01 | 5.04E+04 | |
| | 968.90 | 1.31E+00 | +- 5.61E-01 | 7.33E-01 | 3.24E-01 | 5.04E+04 | |
| Sb-125 | Average:x | 7.13E-02 | +- 1.66E-01 | | | 2.43E+04 | |
| | 463.51 | 8.15E-01 | +- 5.27E-01 | 7.92E-01 | 3.58E-01 | 2.43E+04 | |
| | 427.95 | N-1.06E-02 | +- 1.75E-01 | 3.14E-01 | 1.45E-01 | 2.43E+04 | |
| Tl-208 | 583.14 | 4.93E-01 | +- 1.16E-01 | 1.36E-01 | 6.28E-02 | 1.27E+14 | |
| Bi-214 | Average:x | 2.33E+00 | +- 2.73E-01 | | | 1.40E+07 | |
| | 609.32 | 2.28E+00 | +- 2.94E-01 | 2.45E-01 | 1.12E-01 | 1.40E+07 | |
| | 1120.28 | 2.63E+00 | +- 7.46E-01 | 8.07E-01 | 3.55E-01 | 1.40E+07 | |
| Cs-137 | 661.62 | 2.54E-01 | +- 1.00E-01 | 1.36E-01 | 6.23E-02 | 2.64E+05 | |
| Bi-212 | 727.17 | 1.65E+00 | +- 9.82E-01 | 1.40E+00 | 6.17E-01 | 1.67E+04 | |
| Co-56 | 1238.28 | 3.28E-01 | +- 2.12E-01 | 3.06E-01 | 1.35E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 1.09E+01 | +- 1.71E+00 | 1.09E+00 | 4.65E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N-6.71E-02 | +- 5.48E-01 | 9.71E-01 | 4.55E-01 | 3.80E+06 | |

041076D02.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|----------|-------------------|-------------------|
| Eu-155 | 105.31 | N-2.62E-02 | +- 2.11E-01 | 3.70E-01 | 1.75E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N-2.94E-03 | +- 5.15E-02 | 8.98E-02 | 4.25E-02 | 6.48E+03 | |
| Ce-144 | 133.53 | N-2.15E-01 | +- 3.79E-01 | 6.83E-01 | 3.24E-01 | 6.82E+03 | |
| Ce-139 | 165.85 | N 3.01E-02 | +- 6.33E-02 | 1.07E-01 | 5.03E-02 | 3.30E+03 | |
| Th-227 | 236.00 | N 1.67E-01 | +- 3.76E-01 | 6.36E-01B | 2.99E-01 | 1.90E+05 | |
| Cr-51 | 320.07 | N 1.28E+00 | +- 1.87E+00 | 3.10E+00 | 1.44E+00 | 6.65E+02 | |
| I-131 | 364.48 | N 1.06E+00 | +- 5.87E+00 | 1.02E+01 | 4.74E+00 | 1.93E+02 | |
| Be-7 | 477.56 | N-4.45E-01 | +- 8.85E-01 | 1.69E+00 | 7.71E-01 | 1.28E+03 | |
| Sb-124 | 602.71 | N 6.35E-03 | +- 1.01E-01 | 1.82E-01 | 8.23E-02 | 1.44E+03 | |
| Cs-134 | 604.66 | N 6.21E-02 | +- 5.80E-02 | 9.14E-02B | 4.08E-02 | 1.81E+04 | |
| Ru-106 | 621.84 | N 2.74E-01 | +- 6.59E-01 | 1.13E+00 | 5.14E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N-8.91E-03 | +- 7.35E-02 | 1.36E-01R | 6.22E-02 | 6.00E+03 | |
| Nb-94 | 702.50 | N 4.36E-03 | +- 6.73E-02 | 1.20E-01 | 5.49E-02 | 1.78E+08 | |
| Nb-95 | 765.82 | N-7.19E-03 | +- 1.79E-01 | 3.16E-01R | 1.48E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-1.11E-01 | +- 1.02E-01 | 2.11E-01 | 9.60E-02 | 1.70E+03 | |
| Mn-54 | 834.81 | N 4.08E-02 | +- 6.83E-02 | 1.15E-01 | 5.12E-02 | 7.49E+03 | |
| Sc-46 | 889.26 | N 9.11E-02 | +- 9.61E-02 | 1.53E-01 | 6.72E-02 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 5.86E+00 | +- 8.69E+00 | 1.46E+01 | 6.15E+00 | 3.92E+13 | |
| Eu-154 | 1004.80 | N-5.56E-02 | +- 2.84E-01 | 5.59E-01 | 2.42E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N-7.83E-02 | +- 2.52E-01 | 4.93E-01 | 2.18E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N 3.31E-01 | +- 3.79E-01 | 6.20E-01P | 2.93E-01 | 5.85E+03 | |
| Na-22 | 1274.54 | N 1.23E-02 | +- 7.16E-02 | 1.31E-01 | 5.71E-02 | 2.28E+04 | |
| Co-60 | 1332.51 | N 4.35E-02 | +- 5.13E-02 | 8.15E-02 | 3.24E-02 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 3.35E-01 | +- 3.17E-01 | 4.84E-01 | 2.01E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N 8.82E-02 | +- 6.70E-02 | 9.03E-02 | 3.47E-02 | 6.31E+09 | |

MEASURED TOTAL: 3.55E+01 +- 2.49E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 66.78 | 135.00 | 9 | 19 | 15 | 58 | 0.37 | Deleted |
| 2 | 69.11 | 139.65 | 20 | 29 | 23 | 117 | 0.60 | Deleted |
| 3 | 74.61 | 150.64 | 96 | 38 | 27 | 142 | 0.87 | Unknown |
| 4 | 76.97 | 155.37 | 188 | 46 | 31 | 170 | 0.92 | Unknown |
| 5 | 87.22 | 175.86 | 59 | 36 | 27 | 142 | 0.78 | Unknown |
| 6 | 89.79 | 180.99 | 41 | 35 | 27 | 142 | 0.86 | Unknown |
| 8 | 129.21 | 259.83 | 17 | 22 | 17 | 69 | 0.42 | Unknown |
| 10 | 209.10 | 419.57 | 52 | 24 | 15 | 58 | 0.54 | Unknown |
| 12 | 241.94 | 485.24 | 147 | 39 | 25 | 105 | 1.06 | Unknown |
| 15 | 327.73 | 656.78 | 27 | 21 | 15 | 46 | 0.80 | Unknown |
| 19 | 510.87 | 1023.00 | 37 | 36 | 28 | 84 | 2.50 | Unknown |
| 24 | 768.21 | 1537.58 | 26 | 18 | 12 | 30 | 1.07 | Unknown |
| 30 | 1764.55 | 3529.87 | 37 | 13 | 5 | 4 | 1.97 | Unknown |

000263

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0405096-22 GS040601-7

Code: 041074D03A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 12:41:34 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.20E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.31E+002 g | Real Time | 1808 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041074D03.SPC |

Detector #: 3 (Detector 3)
 Energy(keV) = -0.95 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004
 FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 63.18 | 128.17 | 98 | 55 | 42 | 357 | 0.81 | a |
| 2 | 74.75 | 151.30 | 418 | 70 | 47 | 439 | 0.90 | a |
| 3 | 76.97 | 155.72 | 615 | 75 | 47 | 439 | 0.86 | b |
| 4 | 83.87 | 169.52 | 152 | 73 | 57 | 513 | 1.30 | a |
| 5 | 87.04 | 175.86 | 381 | 74 | 51 | 449 | 1.16 | b |
| 6 | 89.76 | 181.30 | 182 | 68 | 51 | 449 | 1.09 | c |
| 7 | 92.80 | 187.38 | 335 | 78 | 57 | 513 | 1.32 | d |
| 8 | 94.65 | 191.07 | 36 | 57 | 46 | 385 | 0.90 | e NET< CL |
| 9 | 129.19 | 260.09 | 54 | 48 | 38 | 290 | 0.77 | a |
| 10 | 135.27 | 272.26 | 26 | 32 | 25 | 154 | 0.51 | a |
| 11 | 143.63 | 288.95 | 47 | 52 | 42 | 320 | 0.92 | a |
| 12 | 185.96 | 373.57 | 391 | 64 | 41 | 316 | 1.03 | a |
| 13 | 209.28 | 420.16 | 99 | 49 | 37 | 248 | 0.96 | a |
| 14 | 238.63 | 478.83 | 1227 | 86 | 40 | 279 | 1.14 | a |
| 15 | 241.79 | 485.14 | 382 | 63 | 40 | 279 | 1.20 | b |
| 16 | 258.76 | 519.05 | 36 | 36 | 28 | 169 | 0.91 | a |
| 17 | 270.49 | 542.51 | 101 | 49 | 36 | 230 | 1.40 | a |
| 18 | 295.20 | 591.90 | 765 | 65 | 29 | 161 | 1.13 | a |
| 19 | 300.22 | 601.93 | 67 | 32 | 22 | 115 | 0.75 | b |
| 20 | 328.31 | 658.06 | 43 | 27 | 19 | 89 | 0.71 | a |
| 21 | 338.21 | 677.86 | 249 | 51 | 33 | 188 | 1.41 | a |
| 22 | 351.87 | 705.16 | 1286 | 80 | 29 | 157 | 1.31 | a |
| 23 | 463.03 | 927.31 | 90 | 30 | 20 | 76 | 1.21 | a |
| 24 | 510.85 | 1022.89 | 139 | 42 | 29 | 127 | 1.73 | a |

041074D03.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 583.13 | 1167.36 | 393 | 46 | 19 | 72 | 1.48 | a |
| 26 | 609.25 | 1219.57 | 851 | 64 | 21 | 86 | 1.54 | a |
| 27 | 661.69 | 1324.37 | 73 | 30 | 21 | 79 | 1.63 | a |
| 28 | 665.49 | 1331.96 | 29 | 19 | 13 | 40 | 0.84 | b |
| 29 | 727.21 | 1455.32 | 63 | 30 | 21 | 77 | 1.82 | a |
| 30 | 768.69 | 1538.22 | 66 | 25 | 15 | 52 | 1.22 | a |
| 31 | 794.88 | 1590.56 | 46 | 20 | 12 | 29 | 1.30 | a |
| 32 | 860.53 | 1721.78 | 40 | 22 | 14 | 43 | 1.53 | a |
| 33 | 911.27 | 1823.19 | 260 | 39 | 18 | 56 | 2.24 | a |
| 34 | 933.92 | 1868.45 | 46 | 22 | 14 | 37 | 1.92 | a |
| 35 | 965.27 | 1931.11 | 54 | 22 | 13 | 35 | 1.83 | a |
| 36 | 968.98 | 1938.54 | 159 | 31 | 15 | 41 | 2.08 | b |
| 37 | 1120.38 | 2241.12 | 196 | 33 | 15 | 38 | 2.12 | a |
| 38 | 1155.52 | 2311.35 | 24 | 20 | 15 | 36 | 2.24 | a |
| 39 | 1238.53 | 2477.27 | 63 | 30 | 21 | 58 | 3.79 | a Wide Pk |
| 40 | 1377.94 | 2755.89 | 53 | 24 | 16 | 36 | 3.12 | a |
| 41 | 1460.71 | 2921.32 | 277 | 38 | 15 | 35 | 2.59 | a |
| 42 | 1509.24 | 3018.30 | 25 | 17 | 12 | 23 | 2.34 | a |
| 43 | 1729.07 | 3457.67 | 33 | 19 | 12 | 17 | 4.33 | a |
| 44 | 1764.34 | 3528.16 | 131 | 27 | 12 | 21 | 2.87 | a |

041074D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 63.18 | 98 | 55 | 42 | 91 | 55 | 42 | |
| 2 | 74.75 | 418 | 70 | 47 | 414 | 70 | 47 | |
| 3 | 76.97 | 615 | 75 | 47 | 611 | 75 | 47 | |
| 4 | 83.87 | 152 | 73 | 57 | 150 | 74 | 57 | |
| 7 | 92.80 | 335 | 78 | 57 | 319 | 78 | 57 | |
| 11 | 143.63 | 47 | 52 | 42 | 45 | 53 | 42 | |
| 12 | 185.96 | 391 | 64 | 41 | 381 | 64 | 42 | |
| 14 | 238.63 | 1227 | 86 | 40 | 1221 | 86 | 41 | |
| 18 | 295.20 | 765 | 65 | 29 | 761 | 65 | 29 | |
| 21 | 338.21 | 249 | 51 | 33 | 247 | 51 | 33 | |
| 22 | 351.87 | 1286 | 80 | 29 | 1281 | 80 | 30 | |
| 24 | 510.85 | 139 | 42 | 29 | 90 | 43 | 31 | |
| 25 | 583.13 | 393 | 46 | 19 | 387 | 46 | 20 | |
| 26 | 609.25 | 851 | 64 | 21 | 848 | 64 | 21 | |
| 33 | 911.27 | 260 | 39 | 18 | 258 | 39 | 18 | |
| 41 | 1460.71 | 277 | 38 | 15 | 270 | 38 | 16 | |
| 44 | 1764.34 | 131 | 27 | 12 | 129 | 27 | 12 | |

041074D03.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0405096-22 GS040601-7

Code: 041074D03A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 06/26/2004 12:41:34
Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.20e+003 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 3.31e+002 g | Real Time 1808 Sec
Collection Efficiency 1.0000 | Spectrum File 041074D03.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh13).EFF (Geo 13 Eff Cal)
Eff.=1/[3.80E-03*En^-3.74E+00 + 1.52E+02*En^7.83E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E (T) | Concentration (pCi/g) | | Critical MDA | Halflife Level (hrs) | |
|---------|-----------|----------|--------------|----------|-----------------------|-----------|--------------|----------------------|--|
| Th-234 | Average:x | 1.36E+01 | +- | 3.10E+00 | | | 3.92E+13 | | |
| | 63.29 | 1.43E+01 | +- | 8.58E+00 | 1.37E+01 | 6.62E+00 | 3.92E+13 | | |
| | 92.50 | 1.35E+01 | +- | 3.32E+00 | 4.98E+00 | 2.43E+00 | 3.92E+13 | | |
| Ce-144 | 133.53 | 4.68E-01 | +- | 5.69E-01 | 9.36E-01 | 4.44E-01 | 6.82E+03 | | |
| U-235 | 143.76 | 7.23E-01 | +- | 8.39E-01 | 1.38E+00 | 6.68E-01 | 6.17E+12 | | |
| | 185.72 | I.D. | | | | | 6.17E+12 | | |
| Pb-212 | Average:x | 6.71E+00 | +- | 4.66E-01 | | | 1.67E+04 | | |
| | 238.63 | 6.74E+00 | +- | 4.73E-01 | 4.65E-01 | 2.25E-01 | 1.67E+04 | | |
| | 300.09 | 5.82E+00 | +- | 2.76E+00 | 4.13E+00 | 1.95E+00 | 1.67E+04 | | |
| Pb-214 | Average:x | 1.05E+01 | +- | 5.32E-01 | | | 1.40E+07 | | |
| | 295.22 | 1.05E+01 | +- | 9.07E-01 | 8.41E-01 | 4.02E-01 | 1.40E+07 | | |
| | 351.99 | 1.05E+01 | +- | 6.57E-01 | 5.08E-01 | 2.43E-01 | 1.40E+07 | | |
| Ra-228 | Average:x | 6.60E+00 | +- | 6.86E-01 | | | 5.04E+04 | | |
| | 338.40 | 6.58E+00 | +- | 1.36E+00 | 1.83E+00 | 8.80E-01 | 5.04E+04 | | |
| | 911.07 | 6.49E+00 | +- | 9.86E-01 | 9.97E-01 | 4.64E-01 | 5.04E+04 | | |
| | 968.90 | 6.85E+00 | +- | 1.35E+00 | 1.43E+00 | 6.57E-01 | 5.04E+04 | | |
| Sb-125 | Average:x | 5.42E-01 | +- | 3.64E-01 | | | 2.43E+04 | | |
| | 463.51 | 3.34E+00 | +- | 1.13E+00 | 1.56E+00 | 7.30E-01 | 2.43E+04 | | |
| | 427.95 | N | 2.20E-01 | +- | 3.84E-01 | 6.42E-01 | 3.04E-01 | 2.43E+04 | |
| Tl-208 | Average:x | 2.06E+00 | +- | 2.40E-01 | | | 1.27E+14 | | |
| | 583.14 | 2.07E+00 | +- | 2.46E-01 | 2.26E-01 | 1.06E-01 | 1.27E+14 | | |
| | 860.47 | 1.95E+00 | +- | 1.06E+00 | 1.55E+00 | 7.06E-01 | 1.27E+14 | | |
| Bi-214 | Average:x | 8.73E+00 | +- | 6.01E-01 | | | 1.40E+07 | | |
| | 609.32 | 8.58E+00 | +- | 6.45E-01 | 4.60E-01 | 2.16E-01 | 1.40E+07 | | |
| | 1120.28 | 9.73E+00 | +- | 1.65E+00 | 1.59E+00 | 7.27E-01 | 1.40E+07 | | |

041074D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|-----------------|-------------------|-------------------|
| Cs-137 | 661.62 | 4.27E-01 | +- 1.78E-01 | 2.58E-01 | 1.21E-01 | 2.64E+05 | |
| Bi-212 | 727.17 | 5.36E+00 | +- 2.56E+00 | 3.81E+00 | 1.79E+00 | 1.67E+04 | |
| Cs-134 | Average:x | 1.25E-01 | +- 9.30E-02 | . | . | . | 1.81E+04 |
| | 795.76 | 3.21E-01 | +- 1.39E-01 | 1.86E-01 | 8.33E-02 | 1.81E+04 | |
| | 604.66 | N-3.48E-02 | +- 1.25E-01 | 2.24E-01B | 1.05E-01 | 1.81E+04 | |
| Co-56 | 1238.28 | 1.18E+00 | +- 5.71E-01 | 8.53E-01 | 4.01E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 2.27E+01 | +- 3.19E+00 | 2.86E+00 | 1.32E+00 | 1.12E+13 | |
| Am-241 | 59.54 | N 2.27E-01 | +- 1.16E+00 | 1.95E+00B | 9.48E-01 | 3.80E+06 | |
| Eu-155 | 105.31 | N 4.63E-01 | +- 4.72E-01 | 7.70E-01 | 3.72E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N-4.01E-02 | +- 1.17E-01 | 2.01E-01 | 9.72E-02 | 6.48E+03 | |
| Ce-139 | 165.85 | N-4.24E-02 | +- 1.60E-01 | 2.74E-01 | 1.33E-01 | 3.30E+03 | |
| Th-227 | 236.00 | N 5.11E+00 | +- 1.85E+01 | 3.05E+01P | 1.52E+01 | 1.90E+05 | |
| Cr-51 | 320.07 | N 7.91E-01 | +- 3.48E+00 | 5.92E+00 | 2.83E+00 | 6.65E+02 | |
| I-131 | 364.48 | N 7.42E+00 | +- 8.62E+00 | 1.41E+01 | 6.68E+00 | 1.93E+02 | |
| Be-7 | 477.56 | N 1.03E+00 | +- 2.05E+00 | 3.44E+00 | 1.62E+00 | 1.28E+03 | |
| Sb-124 | 602.71 | N-1.09E-01 | +- 2.10E-01 | 3.82E-01B | 1.80E-01 | 1.44E+03 | |
| Ru-106 | 621.84 | N-9.55E-01 | +- 1.32E+00 | 2.43E+00 | 1.15E+00 | 8.84E+03 | |
| Ag-110M | 657.75 | N-1.21E-01 | +- 1.94E-01 | 3.59E-01R | 1.71E-01 | 6.00E+03 | |
| Nb-94 | 702.50 | N 7.35E-02 | +- 1.33E-01 | 2.24E-01 | 1.05E-01 | 1.78E+08 | |
| Nb-95 | 765.82 | N-5.29E-01 | +- 3.94E-01 | 7.54E-01R | 3.64E-01 | 1.54E+03 | |
| Co-58 | 810.75 | N-2.71E-01 | +- 2.03E-01 | 3.99E-01 | 1.87E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N 5.50E-02 | +- 1.58E-01 | 2.70E-01 | 1.26E-01 | 7.49E+03 | |
| Sc-46 | 889.26 | N 9.48E-03 | +- 1.98E-01 | 3.50E-01 | 1.62E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 2.24E+01 | +- 2.36E+01 | 3.81E+01 | 1.75E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N-4.04E-01 | +- 8.10E-01 | 1.50E+00 | 6.97E-01 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 1.67E-01 | +- 5.35E-01 | 9.26E-01 | 4.25E-01 | 1.08E+03 | |
| Zn-65 | 1115.52 | N-6.06E-01 | +- 5.99E-01 | 1.14E+00R | 5.47E-01 | 5.85E+03 | |
| Na-22 | 1274.54 | N-1.19E-01 | +- 1.59E-01 | 3.05E-01 | 1.41E-01 | 2.28E+04 | |
| Co-60 | 1332.51 | N-1.10E-01 | +- 1.60E-01 | 3.06E-01 | 1.41E-01 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 6.03E-01 | +- 8.30E-01 | 1.38E+00 | 6.29E-01 | 1.17E+05 | |
| Al-26 | 1808.65 | N 5.48E-02 | +- 1.30E-01 | 2.27E-01 | 9.88E-02 | 6.31E+09 | |

MEASURED TOTAL: 1.18E+02 +- 7.38E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 2 | 74.75 | 151.30 | 414 | 70 | 47 | 439 | 0.90 | Unknown |
| 3 | 76.97 | 155.72 | 611 | 75 | 47 | 439 | 0.86 | Unknown |
| 4 | 83.87 | 169.52 | 150 | 74 | 57 | 513 | 1.30 | Unknown |
| 5 | 87.04 | 175.86 | 381 | 74 | 51 | 449 | 1.16 | Unknown |
| 6 | 89.76 | 181.30 | 182 | 68 | 51 | 449 | 1.09 | Unknown |
| 8 | 94.65 | 191.07 | 36 | 57 | 46 | 385 | 0.90 | Deleted |
| 9 | 129.19 | 260.09 | 54 | 48 | 38 | 290 | 0.77 | Unknown |
| 13 | 209.28 | 420.16 | 99 | 49 | 37 | 248 | 0.96 | Unknown |
| 15 | 241.79 | 485.14 | 382 | 63 | 40 | 279 | 1.20 | Unknown |

041074D03.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 16 | 258.76 | 519.05 | 36 | 36 | 28 | 169 | 0.91 | Unknown |
| 17 | 270.49 | 542.51 | 101 | 49 | 36 | 230 | 1.40 | Unknown |
| 20 | 328.31 | 658.06 | 43 | 27 | 19 | 89 | 0.71 | Unknown |
| 24 | 510.85 | 1022.89 | 90 | 43 | 31 | 127 | 1.73 | Unknown |
| 28 | 665.49 | 1331.96 | 29 | 19 | 13 | 40 | 0.84 | Unknown |
| 30 | 768.69 | 1538.22 | 66 | 25 | 15 | 52 | 1.22 | Unknown |
| 34 | 933.92 | 1868.45 | 46 | 22 | 14 | 37 | 1.92 | Unknown |
| 35 | 965.27 | 1931.11 | 54 | 22 | 13 | 35 | 1.83 | Unknown |
| 38 | 1155.52 | 2311.35 | 24 | 20 | 15 | 36 | 2.24 | Unknown |
| 40 | 1377.94 | 2755.89 | 53 | 24 | 16 | 36 | 3.12 | Unknown |
| 42 | 1509.24 | 3018.30 | 25 | 17 | 12 | 23 | 2.34 | Unknown |
| 43 | 1729.07 | 3457.67 | 33 | 19 | 12 | 17 | 4.33 | Unknown |
| 44 | 1764.34 | 3528.16 | 129 | 27 | 12 | 21 | 2.87 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-25 GS040601-6

Code: 041082D10A

Sampling Start: 05/06/2004 12:00:00 | Counting Start: 07/01/2004 08:17:10
Sampling Stop: 05/06/2004 12:00:00 | Decay Time. 1.34E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 3.44E+001 g | Real Time 1811 Sec
Collection Efficiency 1.0000 | Spc. File 041082D10.SPC

Detector #: 10 (Detector 10)
Energy(keV) = -1.22 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 46.43 | 95.12 | 79 | 41 | 30 | 209 | 0.85 | a |
| 2 | 63.33 | 128.86 | 185 | 58 | 43 | 357 | 1.19 | a |
| 3 | 74.82 | 151.79 | 710 | 88 | 57 | 539 | 1.56 | a |
| 4 | 77.09 | 156.31 | 900 | 80 | 44 | 377 | 1.22 | b |
| 5 | 83.94 | 170.00 | 135 | 45 | 32 | 232 | 0.88 | a |
| 6 | 87.18 | 176.45 | 301 | 65 | 45 | 371 | 1.38 | b |
| 7 | 89.89 | 181.86 | 154 | 51 | 36 | 278 | 0.98 | c |
| 8 | 92.82 | 187.72 | 532 | 79 | 53 | 464 | 1.66 | d |
| 9 | 128.77 | 259.48 | 109 | 58 | 45 | 297 | 1.94 | a |
| 10 | 143.91 | 289.68 | 37 | 39 | 31 | 188 | 1.08 | a |
| 11 | 153.86 | 309.55 | 60 | 42 | 32 | 195 | 1.27 | a |
| 12 | 185.93 | 373.57 | 382 | 63 | 40 | 252 | 1.73 | a |
| 13 | 209.43 | 420.47 | 88 | 33 | 22 | 113 | 0.85 | a |
| 14 | 238.61 | 478.72 | 1475 | 89 | 37 | 230 | 1.92 | a |
| 15 | 241.68 | 484.86 | 398 | 62 | 39 | 250 | 2.08 | b |
| 16 | 270.18 | 541.74 | 114 | 49 | 36 | 207 | 2.21 | a |
| 17 | 295.32 | 591.92 | 590 | 62 | 32 | 168 | 1.96 | a |
| 18 | 299.93 | 601.11 | 94 | 45 | 34 | 182 | 2.05 | b |
| 19 | 327.82 | 656.80 | 70 | 40 | 29 | 153 | 1.86 | a |
| 20 | 338.32 | 677.75 | 311 | 53 | 32 | 174 | 2.03 | a |
| 21 | 351.90 | 704.86 | 1004 | 73 | 29 | 139 | 2.13 | a |
| 22 | 463.13 | 926.89 | 72 | 34 | 24 | 115 | 1.83 | a |
| 23 | 511.22 | 1022.86 | 273 | 51 | 32 | 150 | 3.10 | a |
| 24 | 583.38 | 1166.91 | 495 | 58 | 30 | 130 | 3.09 | a |

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 25 | 609.68 | 1219.41 | 730 | 66 | 32 | 153 | 2.74 | a |
| 26 | 662.02 | 1323.89 | 299 | 51 | 31 | 135 | 3.32 | a |
| 27 | 727.27 | 1454.13 | 78 | 39 | 29 | 117 | 3.05 | a |
| 28 | 768.58 | 1536.58 | 21 | 50 | 40 | 191 | 4.24 | a NET< CL Wide Pk |
| 29 | 795.70 | 1590.71 | 21 | 21 | 16 | 54 | 1.34 | a |
| 30 | 860.73 | 1720.51 | 67 | 30 | 21 | 66 | 2.96 | a |
| 31 | 911.28 | 1821.42 | 333 | 49 | 27 | 94 | 3.66 | a |
| 32 | 968.99 | 1936.61 | 171 | 46 | 32 | 127 | 3.73 | a |
| 33 | 1120.65 | 2239.34 | 176 | 35 | 19 | 51 | 3.44 | a |
| 34 | 1238.40 | 2474.39 | 51 | 37 | 28 | 80 | 5.25 | a |
| 35 | 1460.88 | 2918.46 | 57 | 30 | 21 | 48 | 4.77 | a |
| 36 | 1729.82 | 3455.29 | 45 | 24 | 16 | 21 | 6.88 | a |
| 37 | 1764.45 | 3524.42 | 138 | 35 | 22 | 43 | 6.04 | a |

041082D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.43 | 79 | 41 | 30 | 48 | 42 | 32 | |
| 2 | 63.33 | 185 | 58 | 43 | 162 | 59 | 44 | |
| 3 | 74.82 | 710 | 88 | 57 | 680 | 89 | 59 | |
| 4 | 77.09 | 900 | 80 | 44 | 865 | 81 | 45 | |
| 5 | 83.94 | 135 | 45 | 32 | 127 | 46 | 33 | |
| 6 | 87.18 | 301 | 65 | 45 | 287 | 65 | 46 | |
| 8 | 92.82 | 532 | 79 | 53 | 477 | 80 | 55 | |
| 12 | 185.93 | 382 | 63 | 40 | 337 | 63 | 42 | |
| 14 | 238.61 | 1475 | 89 | 37 | 1446 | 89 | 39 | |
| 15 | 241.68 | 398 | 62 | 39 | 371 | 63 | 41 | |
| 16 | 270.18 | 114 | 49 | 36 | 111 | 49 | 37 | |
| 17 | 295.32 | 590 | 62 | 32 | 537 | 63 | 35 | |
| 19 | 327.82 | 70 | 40 | 29 | 68 | 40 | 30 | |
| 20 | 338.32 | 311 | 53 | 32 | 308 | 53 | 33 | |
| 21 | 351.90 | 1004 | 73 | 29 | 909 | 73 | 34 | |
| 23 | 511.22 | 273 | 51 | 32 | 124 | 53 | 39 | |
| 24 | 583.38 | 495 | 58 | 30 | 483 | 58 | 31 | |
| 25 | 609.68 | 730 | 66 | 32 | 625 | 67 | 37 | |
| 27 | 727.27 | 78 | 39 | 29 | 75 | 39 | 29 | |
| 28 | 768.58 | 21 | 50 | 40 | 12 | 51 | 41 | NET<CL |
| 31 | 911.28 | 333 | 49 | 27 | 324 | 49 | 28 | |
| 33 | 1120.65 | 176 | 35 | 19 | 153 | 36 | 22 | |
| 34 | 1238.40 | 51 | 37 | 28 | 44 | 38 | 29 | |
| 35 | 1460.88 | 57 | 30 | 21 | 13 | 31 | 25 | NET<CL |
| 36 | 1729.82 | 45 | 24 | 16 | 42 | 24 | 17 | |
| 37 | 1764.45 | 138 | 35 | 22 | 117 | 36 | 24 | |

041082D10.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-25 GS040601-6

Code: 041082D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/01/2004 08:17:10 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.34e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.44e+001 g | Real Time | 1811 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041082D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10) (Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004
Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|------------|--------------|----------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | Average:x | 3.04E+01 | +- | 4.71E+00 | | | | | 3.92E+13 |
| | 63.29 | 2.23E+01 | +- | 8.13E+00 | 1.24E+01 | 6.03E+00 | 3.92E+13 | | |
| | 92.50 | 3.45E+01 | +- | 5.78E+00 | 8.16E+00 | 3.98E+00 | 3.92E+13 | | |
| U-235 | 143.76 | 1.17E+00 | +- | 1.24E+00 | 2.03E+00 | 9.74E-01 | 6.17E+12 | | |
| | 185.72 | I.D. | | | | | | | 6.17E+12 |
| Pb-212 | Average:x | 1.48E+01 | +- | 9.06E-01 | | | | | 1.67E+04 |
| | 238.63 | 1.48E+01 | +- | 9.13E-01 | 8.17E-01 | 3.95E-01 | 1.67E+04 | | |
| | 300.09 | 1.53E+01 | +- | 7.36E+00 | 1.14E+01 | 5.48E+00 | 1.67E+04 | | |
| Pb-214 | Average:x | 1.40E+01 | +- | 9.29E-01 | | | | | 1.40E+07 |
| | 295.22 | 1.39E+01 | +- | 1.62E+00 | 1.86E+00 | 8.94E-01 | 1.40E+07 | | |
| | 351.99 | 1.40E+01 | +- | 1.13E+00 | 1.11E+00 | 5.32E-01 | 1.40E+07 | | |
| Ra-228 | Average:x | 1.54E+01 | +- | 1.62E+00 | | | | | 5.04E+04 |
| | 338.40 | 1.54E+01 | +- | 2.66E+00 | 3.41E+00 | 1.64E+00 | 5.04E+04 | | |
| | 911.07 | 1.59E+01 | +- | 2.41E+00 | 2.85E+00 | 1.36E+00 | 5.04E+04 | | |
| | 968.90 | 1.44E+01 | +- | 3.91E+00 | 5.54E+00 | 2.66E+00 | 5.04E+04 | | |
| Sb-125 | Average:x | 6.24E-01 | +- | 7.22E-01 | | | | | 2.43E+04 |
| | 463.51 | 5.12E+00 | +- | 2.42E+00 | 3.65E+00 | 1.73E+00 | 2.43E+04 | | |
| | 427.95 | N 1.86E-01 | +- | 7.56E-01 | 1.29E+00 | 6.12E-01 | 2.43E+04 | | |
| Tl-208 | Average:x | 4.99E+00 | +- | 5.80E-01 | | | | | 1.27E+14 |
| | 583.14 | 4.94E+00 | +- | 5.92E-01 | 6.63E-01 | 3.18E-01 | 1.27E+14 | | |
| | 860.47 | 6.37E+00 | +- | 2.90E+00 | 4.29E+00 | 2.02E+00 | 1.27E+14 | | |
| Bi-214 | Average:x | 1.25E+01 | +- | 1.23E+00 | | | | | 1.40E+07 |
| | 609.32 | 1.21E+01 | +- | 1.31E+00 | 1.49E+00 | 7.19E-01 | 1.40E+07 | | |
| | 1120.28 | 1.49E+01 | +- | 3.54E+00 | 4.54E+00 | 2.14E+00 | 1.40E+07 | | |

041082D10.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level (hrs) |
|---------|-----------------|------------|--------------------------|-------------|-----------------|----------------------------|
| Cs-137 | 661.62 | 3.37E+00 | +- 5.79E-01 | 7.35E-01 | 3.52E-01 | 2.64E+05 |
| Bi-212 | 727.17 | 1.24E+01 | +- 6.55E+00 | 1.01E+01 | 4.84E+00 | 1.67E+04 |
| Cs-134 | Average:x | 2.88E-01 | +- 2.87E-01 | | | 1.81E+04 |
| | | 795.76 | 2.92E-01 | +- 2.88E-01 | 4.64E-01 | 2.14E-01 |
| | | 604.66 | N-3.01E-01 | +- 3.57E+00 | 5.90E+00P | 2.94E+00 |
| Co-56 | 1238.28 | 1.69E+00 | +- 1.46E+00 | 2.36E+00 | 1.13E+00 | 1.86E+03 |
| K-40 | 1460.75 | N 2.20E+00 | +- 5.07E+00 | 8.56E+00 | 4.05E+00 | 1.12E+13 |
| Am-241 | 59.54 | N 1.11E-01 | +- 8.41E-01 | 1.42E+00B | 6.88E-01 | 3.80E+06 |
| Eu-155 | 105.31 | N 2.17E-01 | +- 8.73E-01 | 1.47E+00 | 7.11E-01 | 4.35E+04 |
| Co-57 | 122.07 | N-2.88E-02 | +- 1.87E-01 | 3.23E-01B | 1.55E-01 | 6.48E+03 |
| Ce-144 | 133.53 | N-1.01E+00 | +- 1.56E+00 | 2.74E+00b | 1.32E+00 | 6.82E+03 |
| Ce-139 | 165.85 | N 5.25E-02 | +- 2.46E-01 | 4.15E-01 | 2.00E-01 | 3.30E+03 |
| Th-227 | 236.00 | N 7.08E+00 | +- 4.90E+01 | 8.06E+01P | 4.03E+01 | 1.90E+05 |
| Cr-51 | 320.07 | N-2.15E+00 | +- 7.13E+00 | 1.25E+01 | 5.97E+00 | 6.65E+02 |
| I-131 | 364.48 | N 2.28E+01 | +- 2.90E+01 | 4.78E+01 | 2.27E+01 | 1.93E+02 |
| Be-7 | 477.56 | N-1.87E+00 | +- 4.18E+00 | 7.48E+00 | 3.55E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N-1.60E+00 | +- 1.44E+00 | 1.06E+01P | 5.29E+00 | 1.44E+03 |
| Ru-106 | 621.84 | N-1.41E+00 | +- 3.29E+00 | 5.83E+00 | 2.77E+00 | 8.84E+03 |
| Ag-110M | 657.75 | N-1.13E+00 | +- 6.63E-01 | 1.25E+00R | 6.08E-01 | 6.00E+03 |
| Nb-94 | 702.50 | N 1.23E-01 | +- 3.31E-01 | 5.59E-01 | 2.66E-01 | 1.78E+08 |
| Nb-95 | 765.82 | N 2.10E-01 | +- 6.87E-01 | 1.16E+00 | 5.55E-01 | 1.54E+03 |
| Co-58 | 810.75 | N-6.65E-01 | +- 6.03E-01 | 1.11E+00 | 5.30E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N 1.20E-02 | +- 4.26E-01 | 7.34E-01 | 3.50E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N 1.74E-01 | +- 4.98E-01 | 8.49E-01 | 3.99E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N 4.99E+01 | +- 5.91E+01 | 9.68E+01 | 4.53E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N 2.04E+00 | +- 1.99E+00 | 3.22E+00 | 1.51E+00 | 7.45E+04 |
| Fe-59 | 1099.22 | N-1.55E+00 | +- 1.75E+00 | 3.21E+00 | 1.52E+00 | 1.08E+03 |
| Zn-65 | 1115.52 | N-1.47E+00 | +- 1.61E+00 | 2.94E+00R | 1.43E+00 | 5.85E+03 |
| Na-22 | 1274.54 | N-2.42E-01 | +- 4.43E-01 | 8.05E-01 | 3.80E-01 | 2.28E+04 |
| Co-60 | 1332.51 | N 3.97E-01 | +- 4.13E-01 | 6.68E-01 | 3.11E-01 | 4.62E+04 |
| Eu-152 | 1408.08 | N 0.00E+00 | +- 2.11E+00 | 3.70E+00 | 1.73E+00 | 1.17E+05 |
| Al-26 | 1808.65 | N 3.80E-02 | +- 4.01E-01 | 7.11E-01 | 3.26E-01 | 6.31E+09 |

MEASURED TOTAL: 1.97E+02 +- 1.70E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.43 | 95.12 | 48 | 42 | 32 | 209 | 0.85 | Unknown |
| 3 | 74.82 | 151.79 | 680 | 89 | 59 | 539 | 1.56 | Unknown |
| 4 | 77.09 | 156.31 | 865 | 81 | 45 | 377 | 1.22 | Unknown |
| 5 | 83.94 | 170.00 | 127 | 46 | 33 | 232 | 0.88 | Unknown |
| 6 | 87.18 | 176.45 | 287 | 65 | 46 | 371 | 1.38 | Unknown |
| 7 | 89.89 | 181.86 | 154 | 51 | 36 | 278 | 0.98 | Unknown |
| 9 | 128.77 | 259.48 | 109 | 58 | 45 | 297 | 1.94 | Unknown |
| 11 | 153.86 | 309.55 | 60 | 42 | 32 | 195 | 1.27 | Unknown |

041082D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 13 | 209.43 | 420.47 | 88 | 33 | 22 | 113 | 0.85 | Unknown |
| 15 | 241.68 | 484.86 | 371 | 63 | 41 | 250 | 2.08 | Unknown |
| 16 | 270.18 | 541.74 | 111 | 49 | 37 | 207 | 2.21 | Unknown |
| 19 | 327.82 | 656.80 | 68 | 40 | 30 | 153 | 1.86 | Unknown |
| 23 | 511.22 | 1022.86 | 124 | 53 | 39 | 150 | 3.10 | Unknown |
| 28 | 768.58 | 1536.58 | 12 | 51 | 41 | 191 | 4.24 | Deleted |
| 36 | 1729.82 | 3455.29 | 42 | 24 | 17 | 21 | 6.88 | Unknown |
| 37 | 1764.45 | 3524.42 | 117 | 36 | 24 | 43 | 6.04 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0405096-26 GS040601-6

Code: 041215D04A

Sampling Start: 05/06/2004 12:00:00 | Counting Start: 07/01/2004 09:03:26
Sampling Stop: 05/06/2004 12:00:00 | Decay Time. 1.34E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 3.21E+001 g | Real Time 1841 Sec
Collection Efficiency 1.0000 | Spc. File 041215D04.SPC

Detector #: 4 (Detector 4)

Energy(keV) = -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000
-----=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 63.50 | 128.90 | 35 | 31 | 23 | 102 | 1.03 | a |
| 2 | 74.76 | 151.39 | 145 | 33 | 19 | 81 | 0.65 | a Wide Pk |
| 3 | 77.03 | 155.91 | 225 | 38 | 19 | 81 | 0.66 | b |
| 4 | 80.87 | 163.59 | 25 | 21 | 16 | 61 | 0.41 | c |
| 5 | 83.97 | 169.78 | 35 | 30 | 22 | 101 | 0.85 | d |
| 6 | 87.16 | 176.14 | 103 | 37 | 26 | 121 | 0.92 | e |
| 7 | 89.95 | 181.70 | 71 | 32 | 22 | 101 | 0.79 | f |
| 8 | 92.89 | 187.57 | 137 | 45 | 32 | 161 | 1.37 | g |
| 9 | 129.17 | 260.00 | 12 | 13 | 9 | 24 | 0.40 | a |
| 10 | 143.92 | 289.44 | 17 | 18 | 13 | 45 | 0.42 | a |
| 11 | 185.91 | 373.27 | 133 | 32 | 19 | 65 | 0.95 | a |
| 12 | 209.07 | 419.50 | 56 | 24 | 15 | 48 | 0.77 | a |
| 13 | 238.48 | 478.21 | 509 | 50 | 18 | 59 | 0.93 | a |
| 14 | 241.48 | 484.20 | 106 | 36 | 24 | 89 | 1.40 | b |
| 15 | 270.05 | 541.24 | 83 | 33 | 22 | 68 | 1.57 | a Wide Pk |
| 16 | 295.13 | 591.30 | 171 | 31 | 14 | 38 | 0.96 | a |
| 17 | 299.88 | 600.78 | 22 | 18 | 13 | 32 | 0.86 | b |
| 18 | 337.98 | 676.84 | 104 | 26 | 13 | 32 | 0.96 | a |
| 19 | 351.66 | 704.14 | 320 | 40 | 15 | 40 | 1.10 | a |
| 20 | 462.74 | 925.89 | 35 | 20 | 13 | 32 | 1.52 | a |
| 21 | 510.71 | 1021.65 | 49 | 22 | 14 | 34 | 1.42 | a |
| 22 | 582.68 | 1165.32 | 137 | 28 | 12 | 28 | 1.39 | a |
| 23 | 608.91 | 1217.67 | 210 | 32 | 11 | 20 | 1.47 | a |
| 24 | 661.23 | 1322.13 | 106 | 26 | 13 | 28 | 1.65 | a |

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 726.59 | 1452.61 | 40 | 19 | 12 | 23 | 2.12 | a |
| 26 | 767.72 | 1534.71 | 17 | 15 | 10 | 22 | 1.36 | a |
| 27 | 860.46 | 1719.84 | 15 | 12 | 7 | 10 | 1.35 | a |
| 28 | 910.77 | 1820.27 | 88 | 21 | 8 | 12 | 1.98 | a |
| 29 | 968.41 | 1935.34 | 30 | 18 | 12 | 27 | 1.58 | a |
| 30 | 1119.70 | 2237.35 | 37 | 16 | 8 | 13 | 1.87 | a |
| 31 | 1460.36 | 2917.38 | 19 | 11 | 6 | 6 | 2.01 | a |
| 32 | 1763.03 | 3521.59 | 35 | 15 | 7 | 7 | 3.37 | a |

041215D04.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 63.50 | 35 | 31 | 24 | 30 | 31 | 24 | |
| 2 | 74.76 | 145 | 33 | 19 | 141 | 34 | 20 | |
| 3 | 77.03 | 225 | 38 | 19 | 220 | 38 | 20 | |
| 6 | 87.16 | 103 | 37 | 26 | 102 | 37 | 26 | |
| 7 | 89.95 | 71 | 32 | 22 | 71 | 32 | 22 | |
| 8 | 92.89 | 137 | 45 | 32 | 127 | 46 | 33 | |
| 11 | 185.91 | 133 | 32 | 19 | 125 | 33 | 20 | |
| 13 | 238.48 | 509 | 50 | 18 | 504 | 50 | 19 | |
| 18 | 337.98 | 104 | 26 | 13 | 102 | 26 | 14 | |
| 19 | 351.66 | 320 | 40 | 15 | 317 | 41 | 16 | |
| 21 | 510.71 | 49 | 22 | 14 | 10 | 23 | 18 | NET<CL |
| 22 | 582.68 | 137 | 28 | 12 | 135 | 28 | 13 | |
| 23 | 608.91 | 210 | 32 | 11 | 207 | 32 | 11 | |
| 28 | 910.77 | 88 | 21 | 8 | 88 | 22 | 10 | |
| 31 | 1460.36 | 19 | 11 | 6 | 13 | 11 | 7 | |

041215D04.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-26 GS040601-6

Code: 041215D04A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/01/2004 09:03:26 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.34e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.21e+001 g | Real Time | 1841 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041215D04.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 4 (Detector 4)

Efficiency File: (D04) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | | N | ENERGY (keV) | E (T) | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------|--------------|-----------|-----------------------|-----------|-----------|----------------|----------------|
| Th-234 | Average:x | 2.03E+01 | +- | 6.90E+00 | | | 3.76E+01 | | 3.92E+13 |
| | 63.29 | 1.66E+01 | +- | 1.70E+01 | 2.76E+01 | 1.31E+01 | 1.31E+01 | 1.31E+01 | 3.92E+13 |
| | 92.50 | 2.10E+01 | +- | 7.56E+00 | 1.13E+01 | 5.41E+00 | 5.41E+00 | 5.41E+00 | 3.92E+13 |
| U-235 | 143.76 | 1.09E+00 | +- | 1.14E+00 | 1.85E+00 | 8.42E-01 | 8.42E-01 | 8.42E-01 | 6.17E+12 |
| | 185.72 | I.D. | | | | | | | 6.17E+12 |
| Pb-212 | Average:x | 1.10E+01 | +- | 1.09E+00 | | | 8.76E-01 | 4.08E-01 | 1.67E+04 |
| | 238.63 | 1.11E+01 | +- | 1.11E+00 | 8.76E-01 | 4.08E-01 | 4.08E-01 | 4.08E-01 | 1.67E+04 |
| | 300.09 | 7.57E+00 | +- | 6.27E+00 | 9.77E+00 | 4.41E+00 | 4.41E+00 | 4.41E+00 | 1.67E+04 |
| Pb-214 | Average:x | 1.02E+01 | +- | 1.08E+00 | | | 1.76E+00 | 8.02E-01 | 1.40E+07 |
| | 295.22 | 9.55E+00 | +- | 1.75E+00 | 1.76E+00 | 8.02E-01 | 8.02E-01 | 8.02E-01 | 1.40E+07 |
| | 351.99 | 1.07E+01 | +- | 1.36E+00 | 1.17E+00 | 5.38E-01 | 5.38E-01 | 5.38E-01 | 1.40E+07 |
| Ra-228 | Average:x | 9.58E+00 | +- | 1.68E+00 | | | 3.25E+00 | 1.48E+00 | 5.04E+04 |
| | 338.40 | 1.12E+01 | +- | 2.84E+00 | 3.25E+00 | 1.48E+00 | 3.25E+00 | 1.48E+00 | 5.04E+04 |
| | 911.07 | 1.01E+01 | +- | 2.55E+00 | 2.55E+00 | 1.12E+00 | 2.55E+00 | 1.12E+00 | 5.04E+04 |
| | 968.90 | 5.94E+00 | +- | 3.61E+00 | 5.33E+00 | 2.40E+00 | 5.33E+00 | 2.40E+00 | 5.04E+04 |
| Sb-125 | Average:x | 5.95E-01 | +- | 8.47E-01 | | | 4.67E+00 | 2.12E+00 | 2.43E+04 |
| | 463.51 | 5.51E+00 | +- | 3.18E+00 | 4.67E+00 | 2.12E+00 | 4.67E+00 | 2.12E+00 | 2.43E+04 |
| | 427.95 | N | 2.18E-01 | +- | 8.79E-01 | 1.54E+00 | 7.02E-01 | 7.02E-01 | 2.43E+04 |
| Tl-208 | Average:x | 3.13E+00 | +- | 6.25E-01 | | | 6.53E-01 | 2.95E-01 | 1.27E+14 |
| | 583.14 | 3.11E+00 | +- | 6.44E-01 | 6.53E-01 | 2.95E-01 | 6.53E-01 | 2.95E-01 | 1.27E+14 |
| | 860.47 | 3.43E+00 | +- | 2.57E+00 | 3.78E+00 | 1.59E+00 | 3.78E+00 | 1.59E+00 | 1.27E+14 |
| Bi-214 | Average:x | 9.05E+00 | +- | 1.31E+00 | | | 1.13E+00 | 5.06E-01 | 1.40E+07 |
| | 609.32 | 9.12E+00 | +- | 1.41E+00 | 1.13E+00 | 5.06E-01 | 1.13E+00 | 5.06E-01 | 1.40E+07 |
| | 1120.28 | 8.53E+00 | +- | 3.62E+00 | 4.42E+00 | 1.89E+00 | 4.42E+00 | 1.89E+00 | 1.40E+07 |
| Cs-137 | 661.62 | 2.74E+00 | +- | 6.67E-01 | 7.37E-01 | 3.34E-01 | 7.37E-01 | 3.34E-01 | 2.64E+05 |

041215D04.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|----------|-------------------|-------------------|
| Bi-212 | 727.17 | 1.51E+01 | +- 7.35E+00 | 1.03E+01 | 4.62E+00 | 1.67E+04 | |
| Nb-95 | 765.82 | 7.86E-01 | +- 6.89E-01 | 1.08E+00 | 4.77E-01 | 1.54E+03 | |
| K-40 | 1460.75 | 5.24E+00 | +- 4.55E+00 | 6.95E+00 | 2.93E+00 | 1.12E+13 | |
| Am-241 | 59.54 | N-8.23E-01 | +- 1.41E+00 | 2.64E+00 | 1.22E+00 | 3.80E+06 | |
| Eu-155 | 105.31 | N 2.06E-01 | +- 8.52E-01 | 1.47E+00 | 6.85E-01 | 4.35E+04 | |
| Co-57 | 122.07 | N 1.23E-01 | +- 2.02E-01 | 3.38E-01 | 1.56E-01 | 6.48E+03 | |
| Ce-144 | 133.53 | N 5.20E-01 | +- 1.43E+00 | 2.46E+00 | 1.13E+00 | 6.82E+03 | |
| Ce-139 | 165.85 | N-1.92E-01 | +- 2.35E-01 | 4.49E-01 | 2.09E-01 | 3.30E+03 | |
| Th-227 | 236.00 | N 1.25E+01 | +- 4.18E+01 | 6.89E+01P | 3.44E+01 | 1.90E+05 | |
| Cr-51 | 320.07 | N 0.00E+00 | +- 6.97E+00 | 1.27E+01 | 5.73E+00 | 6.65E+02 | |
| I-131 | 364.48 | N-2.57E+01 | +- 4.10E+01 | 7.66E+01 | 3.57E+01 | 1.93E+02 | |
| Be-7 | 477.56 | N 1.60E+00 | +- 5.09E+00 | 8.91E+00 | 4.02E+00 | 1.28E+03 | |
| Sb-124 | 602.71 | N-1.41E-01 | +- 6.32E-01 | 1.17E+00B | 5.34E-01 | 1.44E+03 | |
| Cs-134 | 604.66 | N 5.24E-01 | +- 3.66E+00 | 6.07E+00P | 3.01E+00 | 1.81E+04 | |
| Ru-106 | 621.84 | N 3.08E+00 | +- 3.87E+00 | 6.35E+00 | 2.86E+00 | 8.84E+03 | |
| Ag-110M | 657.75 | N 0.00E+00 | +- 5.13E-01 | 9.17E-01R | 4.22E-01 | 6.00E+03 | |
| Nb-94 | 702.50 | N 6.84E-02 | +- 3.93E-01 | 6.97E-01 | 3.17E-01 | 1.78E+08 | |
| Co-58 | 810.75 | N 6.38E-01 | +- 4.65E-01 | 6.43E-01 | 2.60E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N-2.13E-01 | +- 3.40E-01 | 7.01E-01 | 3.09E-01 | 7.49E+03 | |
| Sc-46 | 889.26 | N-2.22E-01 | +- 5.65E-01 | 1.11E+00 | 4.93E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N 6.27E+01 | +- 5.45E+01 | 8.08E+01 | 3.31E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N-1.12E+00 | +- 1.98E+00 | 4.06E+00 | 1.79E+00 | 7.45E+04 | |
| Fe-59 | 1099.22 | N 1.44E-01 | +- 1.38E+00 | 2.61E+00 | 1.11E+00 | 1.08E+03 | |
| Zn-65 | 1115.52 | N-5.38E-01 | +- 1.86E+00 | 3.35E+00P | 1.57E+00 | 5.85E+03 | |
| Co-56 | 1238.28 | N 9.98E-01 | +- 1.28E+00 | 2.10E+00 | 9.25E-01 | 1.86E+03 | |
| Na-22 | 1274.54 | N-1.64E-01 | +- 3.94E-01 | 8.13E-01 | 3.51E-01 | 2.28E+04 | |
| Co-60 | 1332.51 | N-2.78E-02 | +- 4.14E-01 | 8.04E-01 | 3.45E-01 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 2.75E+00 | +- 2.57E+00 | 3.97E+00 | 1.71E+00 | 1.17E+05 | |
| Al-26 | 1808.65 | N-2.65E-01 | +- 4.71E-01 | 1.02E+00 | 4.35E-01 | 6.31E+09 | |

MEASURED TOTAL: 1.75E+02 +- 1.45E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 2 | 74.76 | 151.39 | 141 | 34 | 20 | 81 | 0.65 | Unknown |
| 3 | 77.03 | 155.91 | 220 | 38 | 20 | 81 | 0.66 | Unknown |
| 4 | 80.87 | 163.59 | 25 | 21 | 16 | 61 | 0.41 | Unknown |
| 5 | 83.97 | 169.78 | 35 | 30 | 22 | 101 | 0.85 | Unknown |
| 6 | 87.16 | 176.14 | 102 | 37 | 26 | 121 | 0.92 | Unknown |
| 7 | 89.95 | 181.70 | 71 | 32 | 22 | 101 | 0.79 | Unknown |
| 9 | 129.17 | 260.00 | 12 | 13 | 9 | 24 | 0.40 | Unknown |
| 12 | 209.07 | 419.50 | 56 | 24 | 15 | 48 | 0.77 | Unknown |
| 14 | 241.48 | 484.20 | 106 | 36 | 24 | 89 | 1.40 | Unknown |
| 15 | 270.05 | 541.24 | 83 | 33 | 22 | 68 | 1.57 | Unknown |
| 21 | 510.71 | 1021.65 | 10 | 23 | 18 | 34 | 1.42 | Deleted |

041215D04.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 32 | 1763.03 | 3521.59 | 35 | 15 | 7 | 7 | 3.37 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-27 GS040601-6

Code: 041122D03A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/01/2004 08:16:25 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.34E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.45E+001 g | Real Time | 1820 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041122D03.SPC |

Detector #: 3 (Detector 3)

Energy(keV) = -0.82 + 0.500*Ch + 1.08E-07*Ch^2 + -1.09E-11*Ch^3 07/01/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 63.27 | 128.16 | 1474 | 143 | 99 | 1807 | 0.91 | a |
| 2 | 74.84 | 151.28 | 2460 | 165 | 108 | 2174 | 1.03 | a |
| 3 | 77.10 | 155.81 | 4327 | 182 | 104 | 1993 | 1.03 | b |
| 4 | 79.23 | 160.07 | 223 | 96 | 75 | 1251 | 0.71 | c |
| 5 | 81.13 | 163.87 | 371 | 113 | 87 | 1525 | 0.75 | d |
| 6 | 84.03 | 169.67 | 1140 | 136 | 97 | 1734 | 1.03 | e |
| 7 | 87.20 | 176.00 | 1869 | 167 | 117 | 2169 | 1.32 | f |
| 8 | 89.92 | 181.45 | 1326 | 144 | 102 | 1777 | 1.17 | g |
| 9 | 92.66 | 186.92 | 5102 | 193 | 107 | 1823 | 1.26 | h |
| 10 | 94.51 | 190.63 | 530 | 133 | 103 | 1670 | 1.32 | i |
| 11 | 98.58 | 198.76 | 516 | 140 | 109 | 1766 | 1.41 | j |
| 12 | 105.28 | 212.16 | 214 | 91 | 71 | 1013 | 0.89 | a |
| 13 | 108.95 | 219.49 | 132 | 113 | 91 | 1419 | 1.19 | b |
| 14 | 112.78 | 227.15 | 201 | 91 | 71 | 1013 | 0.79 | c |
| 15 | 129.13 | 259.84 | 325 | 91 | 68 | 943 | 0.85 | a |
| 16 | 143.93 | 289.44 | 639 | 105 | 76 | 1066 | 0.97 | a |
| 17 | 154.26 | 310.09 | 408 | 110 | 84 | 1216 | 1.13 | a |
| 18 | 163.51 | 328.59 | 192 | 84 | 65 | 856 | 0.78 | a |
| 19 | 185.95 | 373.45 | 4355 | 170 | 89 | 1248 | 1.28 | a |
| 20 | 205.30 | 412.13 | 230 | 94 | 73 | 912 | 1.19 | a |
| 21 | 209.32 | 420.16 | 549 | 109 | 81 | 1043 | 1.29 | b |
| 22 | 236.20 | 473.92 | 440 | 113 | 86 | 1028 | 1.62 | a |
| 23 | 238.69 | 478.89 | 6489 | 179 | 65 | 720 | 1.22 | b |
| 24 | 241.78 | 485.06 | 2535 | 139 | 79 | 925 | 1.51 | c |

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 256.28 | 514.06 | 238 | 88 | 68 | 800 | 1.49 | a |
| 26 | 258.68 | 518.85 | 110 | 78 | 62 | 711 | 1.26 | b |
| 27 | 270.16 | 541.81 | 973 | 123 | 87 | 1061 | 2.06 | a Wide Pk |
| 28 | 277.53 | 556.55 | 225 | 69 | 51 | 553 | 1.04 | a |
| 29 | 295.26 | 591.99 | 4264 | 145 | 53 | 546 | 1.22 | a |
| 30 | 300.11 | 601.69 | 403 | 81 | 58 | 624 | 1.25 | b |
| 31 | 323.86 | 649.17 | 75 | 71 | 56 | 587 | 1.30 | a |
| 32 | 327.98 | 657.41 | 292 | 77 | 56 | 587 | 1.27 | b |
| 33 | 338.28 | 677.99 | 1066 | 90 | 51 | 518 | 1.18 | a |
| 34 | 351.89 | 705.19 | 7177 | 182 | 54 | 531 | 1.39 | a HiResid |
| 35 | 388.76 | 778.91 | 40 | 53 | 42 | 375 | 0.91 | a NET< CL |
| 36 | 401.90 | 805.16 | 81 | 54 | 42 | 371 | 1.02 | a |
| 37 | 409.62 | 820.59 | 129 | 57 | 43 | 386 | 0.98 | a |
| 38 | 463.01 | 927.32 | 321 | 66 | 45 | 358 | 1.44 | a |
| 39 | 510.74 | 1022.74 | 568 | 77 | 49 | 378 | 1.74 | a |
| 40 | 583.16 | 1167.50 | 1793 | 98 | 41 | 309 | 1.63 | a |
| 41 | 609.27 | 1219.67 | 4838 | 148 | 42 | 307 | 1.73 | a HiResid |
| 42 | 665.34 | 1331.75 | 114 | 48 | 36 | 248 | 1.46 | a |
| 43 | 702.95 | 1406.93 | 47 | 48 | 38 | 268 | 1.67 | a |
| 44 | 727.31 | 1455.62 | 329 | 54 | 33 | 212 | 1.51 | a |
| 45 | 767.97 | 1536.88 | 499 | 67 | 41 | 284 | 1.98 | a |
| 46 | 772.14 | 1545.21 | 57 | 40 | 30 | 190 | 1.28 | b |
| 47 | 785.68 | 1572.26 | 160 | 48 | 34 | 200 | 1.72 | a |
| 48 | 794.99 | 1590.87 | 159 | 48 | 34 | 200 | 1.88 | b |
| 49 | 806.37 | 1613.61 | 103 | 41 | 29 | 175 | 1.58 | a |
| 50 | 860.45 | 1721.70 | 214 | 47 | 30 | 179 | 1.85 | a |
| 51 | 911.24 | 1823.21 | 1089 | 78 | 34 | 208 | 1.88 | a |
| 52 | 934.33 | 1869.35 | 287 | 51 | 31 | 162 | 2.26 | a |
| 53 | 944.66 | 1889.98 | 32 | 33 | 26 | 127 | 1.72 | b |
| 54 | 964.83 | 1930.30 | 248 | 51 | 33 | 184 | 2.31 | a |
| 55 | 968.91 | 1938.45 | 693 | 65 | 31 | 171 | 2.09 | b |
| 56 | 1001.26 | 2003.11 | 195 | 43 | 27 | 136 | 1.76 | a |
| 57 | 1120.32 | 2241.04 | 918 | 69 | 27 | 126 | 2.21 | a |
| 58 | 1155.84 | 2312.01 | 84 | 34 | 24 | 99 | 2.08 | a |
| 59 | 1238.24 | 2476.68 | 332 | 49 | 27 | 120 | 2.45 | a |
| 60 | 1280.86 | 2561.85 | 45 | 33 | 25 | 111 | 2.09 | a |
| 61 | 1377.84 | 2755.64 | 192 | 39 | 23 | 96 | 2.00 | a |
| 62 | 1401.89 | 2803.69 | 59 | 27 | 19 | 71 | 1.59 | a |
| 63 | 1407.87 | 2815.65 | 143 | 43 | 29 | 127 | 2.87 | b |
| 64 | 1459.25 | 2918.31 | 56 | 32 | 24 | 96 | 2.35 | a |
| 65 | 1509.12 | 3017.96 | 93 | 35 | 24 | 103 | 2.09 | a |
| 66 | 1588.74 | 3177.07 | 67 | 37 | 28 | 125 | 2.37 | a |
| 67 | 1729.58 | 3458.48 | 143 | 34 | 20 | 57 | 3.27 | a |
| 68 | 1764.47 | 3528.21 | 718 | 59 | 21 | 62 | 3.16 | a |
| 69 | 1847.41 | 3693.93 | 88 | 28 | 17 | 50 | 2.33 | a |

041122D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 63.27 | 1474 | 143 | 99 | 1468 | 143 | 99 | |
| 2 | 74.83 | 2460 | 165 | 108 | 2456 | 165 | 109 | |
| 3 | 77.10 | 4327 | 182 | 104 | 4323 | 182 | 104 | |
| 6 | 84.03 | 1140 | 136 | 97 | 1137 | 136 | 97 | |
| 9 | 92.66 | 5102 | 193 | 107 | 5086 | 194 | 108 | |
| 16 | 143.93 | 639 | 105 | 76 | 637 | 105 | 76 | |
| 19 | 185.95 | 4355 | 170 | 89 | 4345 | 171 | 89 | |
| 20 | 205.30 | 230 | 94 | 73 | 229 | 94 | 73 | |
| 23 | 238.69 | 6489 | 179 | 65 | 6483 | 179 | 65 | |
| 29 | 295.26 | 4264 | 145 | 53 | 4260 | 146 | 53 | |
| 33 | 338.28 | 1066 | 90 | 51 | 1064 | 90 | 51 | |
| 34 | 351.89 | 7177 | 182 | 54 | 7171 | 182 | 54 | |
| 39 | 510.74 | 568 | 77 | 49 | 519 | 77 | 51 | |
| 40 | 583.16 | 1793 | 98 | 41 | 1788 | 98 | 41 | |
| 41 | 609.27 | 4838 | 148 | 42 | 4835 | 148 | 42 | |
| 51 | 911.24 | 1089 | 78 | 34 | 1087 | 78 | 34 | |
| 56 | 1001.26 | 195 | 43 | 27 | 194 | 43 | 27 | |
| 64 | 1459.25 | 56 | 32 | 24 | 48 | 33 | 24 | |
| 68 | 1764.47 | 718 | 59 | 21 | 717 | 59 | 21 | |

041122D03.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0405096-27 GS040601-6

Code: 041122D03A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/01/2004 08:16:25 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.34e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.45e+001 g | Real Time | 1820 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041122D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|-----------------|-------------|--------------------------|----------|----------|-------------------|-------------------|
| Th-234 | Average:x | 5.27E+02 | +- 1.87E+01 | | . | . | . | 3.92E+13 |
| | 63.29 | 5.18E+02 | +- 5.04E+01 | 7.09E+01 | 3.50E+01 | 3.92E+13 | | |
| | 92.50 | 5.28E+02 | +- 2.01E+01 | 2.26E+01 | 1.12E+01 | 3.92E+13 | | |
| Eu-155 | 105.31 | 5.03E+00 | +- 2.14E+00 | 3.40E+00 | 1.67E+00 | 4.35E+04 | | |
| U-235 | Average:x | 2.39E+01 | +- 3.49E+00 | | . | . | . | 6.17E+12 |
| | 143.76 | 2.58E+01 | +- 4.26E+00 | 6.26E+00 | 3.08E+00 | 6.17E+12 | | |
| | 163.35 | 1.75E+01 | +- 7.65E+00 | 1.21E+01 | 5.94E+00 | 6.17E+12 | | |
| | 185.72 | I.D. | | . | . | . | 6.17E+12 | |
| | 205.31 | 2.44E+01 | +- 9.98E+00 | 1.58E+01 | 7.77E+00 | 6.17E+12 | | |
| Th-227 | 236.00 | 2.12E+01 | +- 5.45E+00 | 8.46E+00 | 4.16E+00 | 1.90E+05 | | |
| Pb-212 | Average:x | 9.44E+01 | +- 2.59E+00 | | . | . | . | 1.67E+04 |
| | 238.63 | 9.45E+01 | +- 2.61E+00 | 1.94E+00 | 9.50E-01 | 1.67E+04 | | |
| | 300.09 | 9.40E+01 | +- 1.89E+01 | 2.77E+01 | 1.35E+01 | 1.67E+04 | | |
| Tl-208 | Average:x | 2.72E+01 | +- 1.43E+00 | | . | . | . | 1.27E+14 |
| | 277.36 | 2.41E+01 | +- 7.38E+00 | 1.12E+01 | 5.47E+00 | 1.27E+14 | | |
| | 583.14 | 2.72E+01 | +- 1.49E+00 | 1.29E+00 | 6.26E-01 | 1.27E+14 | | |
| | 860.47 | 3.11E+01 | +- 6.86E+00 | 9.26E+00 | 4.43E+00 | 1.27E+14 | | |
| Pb-214 | Average:x | 1.59E+02 | +- 3.23E+00 | | . | . | . | 1.40E+07 |
| | 295.22 | 1.58E+02 | +- 5.39E+00 | 4.02E+00 | 1.96E+00 | 1.40E+07 | | |
| | 351.99 | 1.60E+02 | +- 4.04E+00 | 2.46E+00 | 1.20E+00 | 1.40E+07 | | |
| Ra-228 | Average:x | 8.16E+01 | +- 3.86E+00 | | . | . | . | 5.04E+04 |
| | 338.40 | 7.68E+01 | +- 6.52E+00 | 7.62E+00 | 3.71E+00 | 5.04E+04 | | |
| | 911.07 | 8.15E+01 | +- 5.82E+00 | 5.26E+00 | 2.53E+00 | 5.04E+04 | | |
| | 968.90 | 8.97E+01 | +- 8.38E+00 | 8.38E+00 | 4.02E+00 | 5.04E+04 | | |
| Nb-94 | 702.50 | 7.31E-01 | +- 7.46E-01 | 1.22E+00 | 5.88E-01 | 1.78E+08 | | |

041122D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|------------|--------------------------|-----------|-----------|-------------------|-------------------|
| Bi-212 | 727.17 | 8.24E+01 | +- 1.36E+01 | 1.72E+01 | 8.28E+00 | 1.67E+04 | |
| Pa-234m | 1001.03 | 6.80E+02 | +- 1.49E+02 | 1.96E+02 | 9.31E+01 | 3.92E+13 | |
| Bi-214 | Average:x | 1.38E+02 | +- 9.56E+00 | | | 1.40E+07 | |
| | 1120.28 | 1.38E+02 | +- 1.04E+01 | 8.61E+00 | 4.10E+00 | 1.40E+07 | |
| | 609.32 | 1.38E+02 | +- 2.41E+01 | 3.78E+01 | 1.89E+01 | 1.40E+07 | |
| K-40 | 1460.75 | 1.26E+01 | +- 8.52E+00 | 1.34E+01 | 6.34E+00 | 1.12E+13 | |
| Am-241 | 59.54 | N 4.55E+00 | +- 5.40E+00 | 8.88E+00B | 4.38E+00 | 3.80E+06 | |
| Co-57 | 122.07 | N 3.97E-01 | +- 5.65E-01 | 9.32E-01 | 4.58E-01 | 6.48E+03 | |
| Ce-144 | 133.53 | N-3.41E+00 | +- 4.31E+00 | 7.32E+00 | 3.60E+00 | 6.82E+03 | |
| Ce-139 | 165.85 | N-9.28E-01 | +- 1.15E+00 | 1.93E+00P | 9.57E-01 | 3.30E+03 | |
| Cr-51 | 320.07 | N 0.00E+00 | +- 2.88E+01 | 4.83E+01R | 2.37E+01 | 6.65E+02 | |
| I-131 | 364.48 | N 2.70E+01 | +- 7.59E+01 | 1.27E+02 | 6.17E+01 | 1.93E+02 | |
| Sb-125 | 427.95 | N 1.18E+00 | +- 2.14E+00 | 3.55E+00 | 1.73E+00 | 2.43E+04 | |
| Be-7 | 477.56 | N 1.96E+00 | +- 1.16E+01 | 1.95E+01 | 9.47E+00 | 1.28E+03 | |
| Sb-124 | 602.71 | N 7.93E-01 | +- 1.24E+00 | 2.06E+00B | 9.96E-01 | 1.44E+03 | |
| Cs-134 | 604.66 | N-3.43E-01 | +- 1.01E+00 | 1.73E+00R | 8.44E-01 | 1.81E+04 | |
| Ru-106 | 621.84 | N-4.31E+00 | +- 6.71E+00 | 1.18E+01 | 5.68E+00 | 8.84E+03 | |
| Ag-110M | 657.75 | N 2.84E-01 | +- 7.82E-01 | 1.31E+00 | 6.32E-01 | 6.00E+03 | |
| Cs-137 | 661.62 | N 4.06E-01 | +- 1.10E+00 | 1.81E+00R | 8.80E-01 | 2.64E+05 | |
| Nb-95 | 765.82 | N 3.24E+00 | +- 2.17E+00 | 3.34E+00R | 1.63E+00 | 1.54E+03 | |
| Co-58 | 810.75 | N 1.49E-01 | +- 1.67E+00 | 2.80E+00R | 1.36E+00 | 1.70E+03 | |
| Mn-54 | 834.81 | N 1.06E-01 | +- 9.26E-01 | 1.57E+00 | 7.58E-01 | 7.49E+03 | |
| Sc-46 | 889.26 | N-2.95E-01 | +- 1.17E+00 | 2.03E+00 | 9.74E-01 | 2.01E+03 | |
| Eu-154 | 1004.80 | N-1.32E+01 | +- 6.87E+00 | 1.30E+01R | 6.34E+00 | 7.45E+04 | |
| Fe-59 | 1099.22 | N-5.10E+00 | +- 3.44E+00 | 6.35E+00 | 3.05E+00 | 1.08E+03 | |
| Zn-65 | 1115.52 | N-5.75E+00 | +- 3.07E+00 | 5.81E+00R | 2.83E+00 | 5.85E+03 | |
| Co-56 | 1238.28 | N 1.26E+01 | +- 5.02E+00 | 7.35E+00R | 3.60E+00 | 1.86E+03 | |
| Na-22 | 1274.54 | N-1.95E-01 | +- 1.33E+00 | 2.29E+00R | 1.11E+00 | 2.28E+04 | |
| Co-60 | 1332.51 | N 6.77E-02 | +- 8.07E-01 | 1.39E+00 | 6.60E-01 | 4.62E+04 | |
| Eu-152 | 1408.08 | N 1.79E+01 | +- 8.52E+00 | 1.24E+01R | 6.01E+00 | 1.17E+05 | |
| Al-26 | 1808.65 | N-2.96E-01 | +- 7.48E-01 | 1.37E+00 | 6.37E-01 | 6.31E+09 | |

MEASURED TOTAL: 1.92E+03 +- 3.40E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 2 | 74.83 | 151.28 | 2456 | 165 | 109 | 2174 | 1.03 | Unknown |
| 3 | 77.10 | 155.81 | 4323 | 182 | 104 | 1993 | 1.03 | Unknown |
| 4 | 79.23 | 160.07 | 224 | 96 | 75 | 1251 | 0.71 | Unknown |
| 5 | 81.13 | 163.87 | 371 | 113 | 87 | 1525 | 0.75 | Unknown |
| 6 | 84.03 | 169.67 | 1137 | 136 | 97 | 1734 | 1.03 | Unknown |
| 7 | 87.20 | 176.00 | 1869 | 167 | 117 | 2170 | 1.32 | Unknown |
| 8 | 89.92 | 181.45 | 1326 | 144 | 102 | 1777 | 1.17 | Unknown |
| 10 | 94.51 | 190.63 | 530 | 133 | 103 | 1670 | 1.32 | Unknown |
| 11 | 98.58 | 198.76 | 516 | 140 | 109 | 1766 | 1.41 | 1120DEsc |

041122D03.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 13 | 108.95 | 219.49 | 132 | 113 | 91 | 1419 | 1.19 | Unknown |
| 14 | 112.78 | 227.15 | 201 | 91 | 71 | 1013 | 0.79 | Unknown |
| 15 | 129.13 | 259.84 | 325 | 91 | 68 | 943 | 0.85 | Unknown |
| 17 | 154.26 | 310.09 | 408 | 110 | 84 | 1216 | 1.13 | Unknown |
| 21 | 209.32 | 420.16 | 549 | 109 | 81 | 1043 | 1.29 | Unknown |
| 24 | 241.78 | 485.06 | 2535 | 139 | 79 | 926 | 1.51 | Unknown |
| 25 | 256.28 | 514.06 | 238 | 88 | 68 | 800 | 1.49 | Unknown |
| 26 | 258.68 | 518.85 | 110 | 78 | 62 | 711 | 1.26 | Unknown |
| 27 | 270.16 | 541.81 | 973 | 123 | 87 | 1061 | 2.06 | Unknown |
| 31 | 323.86 | 649.17 | 75 | 71 | 56 | 587 | 1.30 | Unknown |
| 32 | 327.98 | 657.41 | 292 | 77 | 56 | 587 | 1.27 | Unknown |
| 35 | 388.76 | 778.91 | 40 | 53 | 42 | 375 | 0.91 | Deleted |
| 36 | 401.90 | 805.16 | 81 | 54 | 42 | 371 | 1.02 | Unknown |
| 37 | 409.62 | 820.59 | 129 | 57 | 43 | 386 | 0.98 | Unknown |
| 38 | 463.01 | 927.32 | 321 | 66 | 45 | 358 | 1.44 | Unknown |
| 39 | 510.74 | 1022.74 | 519 | 77 | 51 | 378 | 1.74 | Unknown |
| 41 | 609.27 | 1219.67 | 4835 | 148 | 42 | 307 | 1.73 | SPLIT |
| 42 | 665.34 | 1331.75 | 114 | 48 | 36 | 248 | 1.46 | Unknown |
| 45 | 767.97 | 1536.88 | 499 | 67 | 41 | 284 | 1.98 | Unknown |
| 46 | 772.14 | 1545.21 | 57 | 40 | 30 | 190 | 1.28 | Unknown |
| 47 | 785.68 | 1572.26 | 160 | 48 | 34 | 200 | 1.72 | Unknown |
| 48 | 794.99 | 1590.87 | 159 | 48 | 34 | 200 | 1.88 | Unknown |
| 49 | 806.37 | 1613.61 | 103 | 41 | 29 | 175 | 1.58 | Unknown |
| 52 | 934.33 | 1869.35 | 287 | 51 | 31 | 162 | 2.26 | Unknown |
| 53 | 944.66 | 1889.98 | 32 | 33 | 26 | 127 | 1.72 | Unknown |
| 54 | 964.83 | 1930.30 | 248 | 51 | 33 | 184 | 2.31 | Unknown |
| 58 | 1155.84 | 2312.01 | 84 | 34 | 24 | 99 | 2.08 | Unknown |
| 59 | 1238.24 | 2476.68 | 332 | 49 | 27 | 120 | 2.45 | Unknown |
| 60 | 1280.86 | 2561.85 | 45 | 33 | 25 | 111 | 2.09 | Unknown |
| 61 | 1377.84 | 2755.64 | 192 | 39 | 23 | 96 | 2.00 | Unknown |
| 62 | 1401.89 | 2803.69 | 59 | 27 | 19 | 71 | 1.59 | Unknown |
| 63 | 1407.87 | 2815.65 | 143 | 43 | 29 | 128 | 2.87 | Unknown |
| 65 | 1509.12 | 3017.96 | 93 | 35 | 24 | 103 | 2.09 | Unknown |
| 66 | 1588.74 | 3177.07 | 67 | 37 | 28 | 125 | 2.37 | Unknown |
| 67 | 1729.58 | 3458.48 | 143 | 34 | 20 | 57 | 3.27 | Unknown |
| 68 | 1764.47 | 3528.21 | 717 | 59 | 21 | 62 | 3.16 | Unknown |
| 69 | 1847.41 | 3693.93 | 88 | 28 | 17 | 50 | 2.33 | Unknown |
| 71 | 609.27 | 1219.67 | 52 | 1691 | 42 | 307 | 1.73 | 1120SEsc |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-28 GS040601-6

Code: 041053D07A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/01/2004 08:16:49 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.34E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.81E+001 g | Real Time | 1811 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041053D07.SPC |

Detector #: 7 (Detector 7)

Energy(keV) = -2.03 + 0.500*Ch + 5.21E-07*Ch^2 + -8.19E-11*Ch^3 07/01/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.50 | 97.02 | 772 | 80 | 48 | 455 | 0.89 | a |
| 2 | 50.09 | 104.19 | 114 | 85 | 68 | 728 | 1.31 | b |
| 3 | 53.14 | 110.29 | 160 | 63 | 48 | 455 | 0.76 | c |
| 4 | 63.24 | 130.48 | 1072 | 97 | 59 | 692 | 0.86 | a |
| 5 | 67.74 | 139.48 | 52 | 54 | 43 | 455 | 0.43 | a |
| 6 | 74.81 | 153.61 | 2134 | 122 | 66 | 800 | 0.90 | a HiResid |
| 7 | 77.08 | 158.13 | 3304 | 135 | 58 | 667 | 0.89 | b HiResid |
| 8 | 79.29 | 162.56 | 98 | 53 | 40 | 400 | 0.43 | c HiResid |
| 9 | 81.21 | 166.39 | 154 | 55 | 40 | 400 | 0.46 | d HiResid |
| 10 | 84.02 | 172.00 | 525 | 92 | 66 | 800 | 1.01 | e HiResid |
| 11 | 87.17 | 178.31 | 1079 | 103 | 66 | 800 | 1.04 | f HiResid |
| 12 | 89.88 | 183.73 | 620 | 86 | 58 | 667 | 0.85 | g HiResid |
| 13 | 92.87 | 189.69 | 1496 | 111 | 66 | 800 | 1.05 | h HiResid |
| 14 | 98.99 | 201.92 | 251 | 97 | 75 | 734 | 1.76 | a Wide Pk |
| 15 | 105.15 | 214.24 | 145 | 79 | 62 | 608 | 1.29 | a |
| 16 | 108.58 | 221.09 | 48 | 55 | 43 | 380 | 0.85 | b |
| 17 | 112.82 | 229.57 | 65 | 63 | 50 | 456 | 0.90 | c |
| 18 | 128.98 | 261.86 | 204 | 57 | 41 | 333 | 0.76 | a |
| 19 | 143.82 | 291.51 | 168 | 60 | 45 | 373 | 1.01 | a |
| 20 | 153.84 | 311.54 | 130 | 63 | 48 | 394 | 1.11 | a |
| 21 | 163.39 | 330.61 | 42 | 60 | 49 | 401 | 1.18 | a NET< CL |
| 22 | 185.88 | 375.53 | 1014 | 85 | 46 | 363 | 1.17 | a |
| 23 | 209.15 | 422.03 | 289 | 57 | 38 | 260 | 0.90 | a |
| 24 | 235.74 | 475.14 | 88 | 44 | 33 | 203 | 0.90 | a |

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 238.53 | 480.71 | 3105 | 119 | 33 | 203 | 1.02 | b |
| 26 | 241.61 | 486.87 | 910 | 85 | 49 | 338 | 1.56 | c |
| 27 | 256.30 | 516.21 | 55 | 36 | 27 | 146 | 0.78 | a |
| 28 | 258.70 | 521.00 | 53 | 31 | 23 | 117 | 0.69 | b |
| 29 | 270.10 | 543.77 | 359 | 71 | 50 | 323 | 1.77 | a Wide Pk |
| 30 | 277.24 | 558.03 | 105 | 41 | 29 | 173 | 0.87 | a |
| 31 | 295.12 | 593.73 | 1332 | 84 | 34 | 193 | 1.09 | a |
| 32 | 299.95 | 603.38 | 201 | 43 | 26 | 138 | 0.84 | b |
| 33 | 327.93 | 659.25 | 133 | 45 | 32 | 175 | 1.14 | a |
| 34 | 338.17 | 679.71 | 518 | 55 | 26 | 136 | 0.90 | a |
| 35 | 351.79 | 706.91 | 2048 | 99 | 33 | 184 | 1.12 | a |
| 36 | 409.26 | 821.65 | 86 | 34 | 23 | 116 | 1.04 | a |
| 37 | 462.85 | 928.64 | 147 | 37 | 23 | 103 | 1.21 | a |
| 38 | 510.80 | 1024.33 | 259 | 45 | 26 | 115 | 1.46 | a |
| 39 | 562.83 | 1128.18 | 29 | 25 | 19 | 77 | 0.96 | a |
| 40 | 583.19 | 1168.81 | 758 | 62 | 23 | 102 | 1.24 | a |
| 41 | 609.32 | 1220.96 | 1475 | 81 | 22 | 92 | 1.35 | a |
| 42 | 727.38 | 1456.54 | 142 | 35 | 21 | 79 | 1.50 | a |
| 43 | 768.37 | 1538.32 | 77 | 30 | 20 | 82 | 1.09 | a |
| 44 | 785.60 | 1572.71 | 44 | 20 | 12 | 38 | 0.82 | a |
| 45 | 794.92 | 1591.30 | 91 | 30 | 19 | 67 | 1.61 | a |
| 46 | 806.28 | 1613.96 | 23 | 18 | 13 | 38 | 0.98 | a |
| 47 | 860.53 | 1722.18 | 66 | 25 | 16 | 50 | 1.33 | a |
| 48 | 911.14 | 1823.14 | 484 | 48 | 15 | 46 | 1.55 | a |
| 49 | 933.94 | 1868.63 | 63 | 24 | 15 | 43 | 1.47 | a |
| 50 | 964.50 | 1929.59 | 90 | 24 | 12 | 34 | 1.12 | a |
| 51 | 968.92 | 1938.40 | 317 | 41 | 16 | 48 | 1.69 | b |
| 52 | 1120.40 | 2240.59 | 311 | 38 | 11 | 23 | 1.87 | a |
| 53 | 1155.43 | 2310.46 | 27 | 24 | 18 | 44 | 2.76 | a |
| 54 | 1238.22 | 2475.62 | 84 | 26 | 15 | 43 | 1.59 | a |
| 55 | 1281.04 | 2561.05 | 25 | 18 | 13 | 30 | 1.96 | a |
| 56 | 1377.54 | 2753.57 | 58 | 19 | 9 | 17 | 1.33 | a |
| 57 | 1401.79 | 2801.96 | 41 | 17 | 10 | 17 | 1.72 | a |
| 58 | 1407.65 | 2813.65 | 53 | 19 | 10 | 19 | 1.90 | b |
| 59 | 1509.12 | 3016.11 | 21 | 14 | 9 | 17 | 1.11 | a |
| 60 | 1728.76 | 3454.51 | 32 | 15 | 8 | 13 | 1.71 | a |
| 61 | 1763.93 | 3524.75 | 171 | 29 | 10 | 18 | 2.12 | a |

041053D07.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S V e r s . 2 . 2 . 1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|------|
| 1 | 46.50 | 772 | 80 | 48 | 757 | 80 | 48 | |
| 3 | 53.14 | 160 | 63 | 48 | 158 | 63 | 48 | |
| 4 | 63.24 | 1072 | 97 | 59 | 1060 | 97 | 59 | |
| 5 | 67.74 | 52 | 54 | 43 | 47 | 54 | 43 | |
| 6 | 74.81 | 2134 | 122 | 66 | 2131 | 122 | 66 | |
| 7 | 77.08 | 3304 | 135 | 58 | 3302 | 135 | 58 | |
| 10 | 84.02 | 525 | 92 | 66 | 522 | 92 | 66 | |
| 13 | 92.87 | 1496 | 111 | 66 | 1480 | 111 | 66 | |
| 17 | 112.82 | 65 | 63 | 50 | 64 | 63 | 50 | |
| 18 | 128.98 | 204 | 57 | 41 | 203 | 57 | 41 | |
| 19 | 143.82 | 168 | 60 | 45 | 164 | 61 | 45 | |
| 22 | 185.88 | 1014 | 85 | 46 | 1006 | 85 | 46 | |
| 25 | 238.53 | 3105 | 119 | 33 | 3098 | 119 | 34 | |
| 29 | 270.10 | 359 | 71 | 50 | 359 | 71 | 50 | |
| 34 | 338.17 | 518 | 55 | 26 | 516 | 55 | 26 | |
| 35 | 351.79 | 2048 | 99 | 33 | 2046 | 99 | 33 | |
| 38 | 510.80 | 259 | 45 | 26 | 224 | 45 | 28 | |
| 40 | 583.19 | 758 | 62 | 24 | 756 | 62 | 24 | |
| 41 | 609.32 | 1475 | 81 | 22 | 1473 | 82 | 23 | |
| 48 | 911.14 | 484 | 48 | 15 | 482 | 48 | 16 | |
| 51 | 968.92 | 317 | 41 | 16 | 315 | 41 | 16 | |

041053D07.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo.11 / Solid

Sample ID: 0405096-28 GS040601-6

Code: 041053D07A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/06/2004 12:00:00 | Counting Start: | 07/01/2004 08:16:49 |
| Sampling Stop: | 05/06/2004 12:00:00 | Decay Time | 1.34e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.81e+001 g | Real Time | 1811 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041053D07.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 7 (Detector 7)

Efficiency File: (D07) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|------------|--------------|-----------|-----------------------|-----------|----------|----------------|----------------|
| Th-234 | Average:x | 1.27E+02 | +- | 7.36E+00 | | | 3.92E+13 | | |
| | 63.29 | 1.32E+02 | +- | 1.21E+01 | 1.50E+01 | 7.35E+00 | 3.92E+13 | | |
| | 92.50 | 1.24E+02 | +- | 9.29E+00 | 1.13E+01 | 5.53E+00 | 3.92E+13 | | |
| Eu-155 | 105.31 | 3.31E+00 | +- | 1.81E+00 | 2.90E+00 | 1.42E+00 | 4.35E+04 | | |
| U-235 | 143.76 | 8.22E+00 | +- | 3.04E+00 | 4.67E+00 | 2.27E+00 | 6.17E+12 | | |
| | 185.72 | I.D. | | | | | 6.17E+12 | | |
| Th-227 | 236.00 | 5.72E+00 | +- | 2.88E+00 | 4.47E+00 | 2.15E+00 | 1.90E+05 | | |
| Pb-212 | Average:x | 6.06E+01 | +- | 2.28E+00 | | | 1.67E+04 | | |
| | 238.63 | 6.05E+01 | +- | 2.32E+00 | 1.36E+00 | 6.56E-01 | 1.67E+04 | | |
| | 300.09 | 6.35E+01 | +- | 1.34E+01 | 1.73E+01 | 8.25E+00 | 1.67E+04 | | |
| Tl-208 | Average:x | 1.60E+01 | +- | 1.26E+00 | | | 1.27E+14 | | |
| | 277.36 | 1.51E+01 | +- | 5.93E+00 | 8.86E+00 | 4.23E+00 | 1.27E+14 | | |
| | 583.14 | 1.62E+01 | +- | 1.33E+00 | 1.07E+00 | 5.06E-01 | 1.27E+14 | | |
| | 860.47 | 1.39E+01 | +- | 5.27E+00 | 7.18E+00 | 3.30E+00 | 1.27E+14 | | |
| Pb-214 | Average:x | 6.38E+01 | +- | 2.45E+00 | | | 1.40E+07 | | |
| | 295.22 | 6.68E+01 | +- | 4.19E+00 | 3.51E+00 | 1.68E+00 | 1.40E+07 | | |
| | 351.99 | 6.22E+01 | +- | 3.01E+00 | 2.09E+00 | 1.00E+00 | 1.40E+07 | | |
| Ra-228 | Average:x | 5.33E+01 | +- | 3.39E+00 | | | 5.04E+04 | | |
| | 338.40 | 5.08E+01 | +- | 5.46E+00 | 5.43E+00 | 2.58E+00 | 5.04E+04 | | |
| | 911.07 | 5.26E+01 | +- | 5.22E+00 | 3.72E+00 | 1.71E+00 | 5.04E+04 | | |
| | 968.90 | 5.97E+01 | +- | 7.69E+00 | 6.68E+00 | 3.08E+00 | 5.04E+04 | | |
| Cs-134 | Average:x | 5.08E-01 | +- | 4.71E-01 | | | 1.81E+04 | | |
| | 563.26 | 6.36E+00 | +- | 5.62E+00 | 9.00E+00 | 4.20E+00 | 1.81E+04 | | |
| | 604.66 | N-4.04E-01 | +- | 5.56E-01 | 1.02E+00B | 4.81E-01 | 1.81E+04 | | |
| | 795.76 | 2.72E+00 | +- | 8.95E-01 | 1.22E+00 | 5.70E-01 | 1.81E+04 | | |

041053D07.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level (hrs) |
|---------|-----------|----------|--------------|-------------|-----------------------|----------|--------------|----------------------|
| Bi-214 | Average:x | 6.15E+01 | +- 3.10E+00 | . | . | . | . | 1.40E+07 |
| | 609.32 | 6.03E+01 | +- 3.33E+00 | 1.96E+00 | 9.23E-01 | 1.40E+07 | | |
| | 1120.28 | 6.95E+01 | +- 8.47E+00 | 5.72E+00 | 2.56E+00 | 1.40E+07 | | |
| Bi-212 | 727.17 | 5.08E+01 | +- 1.26E+01 | 1.62E+01 | 7.63E+00 | 1.67E+04 | | |
| Eu-152 | 1408.08 | 1.07E+01 | +- 3.82E+00 | 4.63E+00 | 2.04E+00 | 1.17E+05 | | |
| Am-241 | 59.54 | N | 1.08E+00 | +- 9.16E-01 | 1.49E+00B | 7.26E-01 | 3.80E+06 | |
| Co-57 | 122.07 | N | -2.03E-02 | +- 3.81E-01 | 6.46E-01 | 3.14E-01 | 6.48E+03 | |
| Ce-144 | 133.53 | N | -6.52E-01 | +- 3.02E+00 | 5.15E+00 | 2.50E+00 | 6.82E+03 | |
| Ce-139 | 165.85 | N | -2.08E-01 | +- 5.28E-01 | 9.08E-01 | 4.41E-01 | 3.30E+03 | |
| Cr-51 | 320.07 | N | 6.98E-01 | +- 1.58E+01 | 2.70E+01 | 1.30E+01 | 6.65E+02 | |
| I-131 | 364.48 | N | 2.26E+01 | +- 6.28E+01 | 1.06E+02 | 5.06E+01 | 1.93E+02 | |
| Sb-125 | 427.95 | N | -5.44E-01 | +- 1.42E+00 | 2.52E+00 | 1.20E+00 | 2.43E+04 | |
| Be-7 | 477.56 | N | -1.18E+00 | +- 9.80E+00 | 1.70E+01 | 8.12E+00 | 1.28E+03 | |
| Sb-124 | 602.71 | N | 3.61E-01 | +- 9.96E-01 | 1.69E+00 | 7.97E-01 | 1.44E+03 | |
| Ru-106 | 621.84 | N | 4.79E+00 | +- 6.00E+00 | 9.87E+00 | 4.64E+00 | 8.84E+03 | |
| Ag-110M | 657.75 | N | -6.26E-01 | +- 7.16E-01 | 1.32E+00 | 6.24E-01 | 6.00E+03 | |
| Cs-137 | 661.62 | N | 4.09E-01 | +- 7.25E-01 | 1.21E+00 | 5.74E-01 | 2.64E+05 | |
| Nb-94 | 702.50 | N | -1.38E-02 | +- 6.28E-01 | 1.09E+00 | 5.17E-01 | 1.78E+08 | |
| Nb-95 | 765.82 | N | -1.81E+00 | +- 1.89E+00 | 3.48E+00R | 1.68E+00 | 1.54E+03 | |
| Co-58 | 810.75 | N | -1.42E-01 | +- 8.34E-01 | 1.51E+00B | 6.98E-01 | 1.70E+03 | |
| Mn-54 | 834.81 | N | 1.73E-01 | +- 7.29E-01 | 1.25E+00 | 5.88E-01 | 7.49E+03 | |
| Sc-46 | 889.26 | N | 4.72E-01 | +- 8.79E-01 | 1.48E+00 | 6.84E-01 | 2.01E+03 | |
| Pa-234m | 1001.03 | N | 5.64E+01 | +- 1.11E+02 | 1.88E+02 | 8.69E+01 | 3.92E+13 | |
| Eu-154 | 1004.80 | N | -5.29E+00 | +- 3.57E+00 | 7.11E+00 | 3.32E+00 | 7.45E+04 | |
| Fe-59 | 1099.22 | N | -1.63E+00 | +- 2.75E+00 | 5.16E+00 | 2.39E+00 | 1.08E+03 | |
| Zn-65 | 1115.52 | N | -3.36E+00 | +- 2.10E+00 | 4.41E+00R | 2.10E+00 | 5.85E+03 | |
| Co-56 | 1238.28 | N | 4.53E+00 | +- 3.78E+00 | 5.71E+00R | 2.73E+00 | 1.86E+03 | |
| Na-22 | 1274.54 | N | -3.18E-01 | +- 6.46E-01 | 1.23E+00B | 5.63E-01 | 2.28E+04 | |
| Co-60 | 1332.51 | N | -2.44E-01 | +- 6.99E-01 | 1.31E+00 | 5.98E-01 | 4.62E+04 | |
| K-40 | 1460.75 | N | 4.25E+00 | +- 7.21E+00 | 1.21E+01 | 5.53E+00 | 1.12E+13 | |
| Al-26 | 1808.65 | N | 3.12E-01 | +- 6.66E-01 | 1.15E+00 | 5.05E-01 | 6.31E+09 | |

MEASURED TOTAL: 5.57E+02 +- 2.56E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C. L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|------------|---------------|--------------|------------|------------|---------|
| 1 | 46.50 | 97.02 | 757 | 80 | 48 | 455 | 0.89 | Unknown |
| 2 | 50.09 | 104.19 | 114 | 85 | 68 | 728 | 1.31 | Unknown |
| 3 | 53.14 | 110.29 | 158 | 63 | 48 | 455 | 0.76 | Unknown |
| 5 | 67.74 | 139.48 | 47 | 54 | 43 | 455 | 0.43 | Unknown |
| 6 | 74.81 | 153.61 | 2131 | 122 | 66 | 800 | 0.90 | Unknown |
| 7 | 77.08 | 158.13 | 3302 | 135 | 58 | 667 | 0.89 | Unknown |
| 8 | 79.29 | 162.56 | 98 | 53 | 40 | 400 | 0.43 | Unknown |
| 9 | 81.21 | 166.39 | 154 | 55 | 40 | 400 | 0.46 | Unknown |
| 10 | 84.02 | 172.00 | 522 | 92 | 66 | 800 | 1.01 | Unknown |

041053D07.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 11 | 87.17 | 178.31 | 1079 | 104 | 66 | 800 | 1.04 | Unknown |
| 12 | 89.88 | 183.73 | 620 | 86 | 58 | 667 | 0.85 | Unknown |
| 14 | 98.99 | 201.92 | 251 | 97 | 75 | 734 | 1.76 | 1120DEsc |
| 16 | 108.58 | 221.09 | 48 | 55 | 43 | 380 | 0.85 | Unknown |
| 17 | 112.82 | 229.57 | 64 | 63 | 50 | 456 | 0.90 | Unknown |
| 18 | 128.98 | 261.86 | 203 | 57 | 41 | 333 | 0.76 | Unknown |
| 20 | 153.84 | 311.54 | 130 | 63 | 48 | 394 | 1.11 | Unknown |
| 21 | 163.39 | 330.61 | 42 | 60 | 49 | 401 | 1.18 | Deleted |
| 23 | 209.15 | 422.03 | 289 | 57 | 38 | 260 | 0.90 | Unknown |
| 26 | 241.61 | 486.87 | 910 | 85 | 49 | 338 | 1.56 | Unknown |
| 27 | 256.30 | 516.21 | 55 | 36 | 27 | 146 | 0.78 | Unknown |
| 28 | 258.70 | 521.00 | 53 | 31 | 23 | 117 | 0.69 | Unknown |
| 29 | 270.10 | 543.77 | 359 | 71 | 50 | 323 | 1.77 | Unknown |
| 33 | 327.93 | 659.25 | 133 | 45 | 32 | 175 | 1.14 | Unknown |
| 36 | 409.26 | 821.65 | 86 | 34 | 23 | 116 | 1.04 | Unknown |
| 37 | 462.85 | 928.64 | 147 | 37 | 23 | 103 | 1.21 | Unknown |
| 38 | 510.80 | 1024.33 | 224 | 45 | 28 | 115 | 1.46 | Unknown |
| 43 | 768.37 | 1538.32 | 77 | 30 | 20 | 82 | 1.09 | Unknown |
| 44 | 785.60 | 1572.71 | 44 | 20 | 12 | 38 | 0.82 | Unknown |
| 46 | 806.28 | 1613.96 | 23 | 18 | 13 | 38 | 0.98 | Unknown |
| 49 | 933.94 | 1868.63 | 63 | 24 | 15 | 43 | 1.47 | Unknown |
| 50 | 964.50 | 1929.59 | 90 | 24 | 12 | 34 | 1.12 | Unknown |
| 53 | 1155.43 | 2310.46 | 27 | 24 | 18 | 44 | 2.76 | Unknown |
| 54 | 1238.22 | 2475.62 | 84 | 26 | 15 | 43 | 1.59 | Unknown |
| 55 | 1281.04 | 2561.05 | 25 | 18 | 13 | 30 | 1.96 | Unknown |
| 56 | 1377.54 | 2753.57 | 58 | 19 | 9 | 17 | 1.33 | Unknown |
| 57 | 1401.79 | 2801.96 | 41 | 17 | 10 | 17 | 1.72 | Unknown |
| 59 | 1509.12 | 3016.11 | 21 | 14 | 9 | 17 | 1.11 | Unknown |
| 60 | 1728.76 | 3454.51 | 32 | 15 | 8 | 13 | 1.71 | Unknown |
| 61 | 1763.93 | 3524.75 | 171 | 29 | 10 | 18 | 2.12 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-29 GS040601-7

Code: 041077D02A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 06/26/2004 13:18:21
Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.20E+003 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 3.85E+002 g | Real Time 1811 Sec
Collection Efficiency 1.0000 | Spc. File 041077D02.SPC

Detector #: 2 (Detector 2)

Energy(keV) = -0.73 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|---------------------------------|
| 1 | 46.70 | 94.85 | 38 | 57 | 46 | 393 | 1.05 | a NET< CL |
| 2 | 63.48 | 128.39 | 43 | 41 | 32 | 250 | 0.41 | a |
| 3 | 74.73 | 150.88 | 438 | 74 | 50 | 507 | 0.80 | a |
| 4 | 77.04 | 155.52 | 830 | 84 | 50 | 507 | 0.79 | b |
| 5 | 84.00 | 169.43 | 140 | 77 | 60 | 611 | 1.18 | a |
| 6 | 87.15 | 175.73 | 382 | 76 | 53 | 524 | 0.91 | b |
| 7 | 89.80 | 181.02 | 301 | 73 | 53 | 524 | 0.92 | c |
| 8 | 92.98 | 187.38 | 324 | 81 | 60 | 611 | 1.19 | d |
| 9 | 94.56 | 190.54 | 59 | 34 | 25 | 175 | 0.41 | e |
| 10 | 99.61 | 200.64 | 59 | 55 | 44 | 385 | 0.74 | a |
| 11 | 97.77 | 196.96 | 0 | 613 | 504 | 6560 | 13.16 | a NET< CL HiResid Wide Pk |
| 12 | 115.03 | 231.47 | 20 | 48 | 39 | 331 | 0.69 | a NET< CL |
| 13 | 119.79 | 241.00 | 9 | 30 | 24 | 166 | 0.40 | b NET< CL |
| 14 | 128.91 | 259.23 | 186 | 74 | 57 | 547 | 1.10 | a |
| 15 | 143.80 | 289.01 | 36 | 40 | 32 | 248 | 0.45 | a |
| 16 | 185.97 | 373.32 | 317 | 78 | 57 | 508 | 1.24 | a |
| 17 | 188.31 | 378.01 | 10 | 34 | 28 | 191 | 0.44 | b NET< CL |
| 18 | 209.15 | 419.67 | 261 | 61 | 43 | 338 | 0.94 | a |
| 19 | 238.58 | 478.52 | 2840 | 118 | 41 | 310 | 0.94 | a |
| 20 | 241.49 | 484.35 | 495 | 81 | 56 | 465 | 1.53 | b |
| 21 | 270.22 | 541.80 | 183 | 57 | 41 | 285 | 1.15 | a |
| 22 | 277.29 | 555.94 | 91 | 40 | 29 | 171 | 0.81 | a |

041077D02.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 23 | 295.18 | 591.71 | 576 | 62 | 33 | 196 | 1.00 | a |
| 24 | 299.97 | 601.29 | 184 | 52 | 37 | 229 | 1.07 | b |
| 25 | 327.77 | 656.87 | 193 | 49 | 33 | 183 | 1.22 | a |
| 26 | 338.18 | 677.69 | 573 | 60 | 30 | 171 | 0.98 | a |
| 27 | 351.80 | 704.91 | 912 | 72 | 33 | 183 | 1.12 | a |
| 28 | 409.48 | 820.26 | 90 | 40 | 29 | 142 | 1.17 | a |
| 29 | 462.86 | 927.00 | 162 | 39 | 24 | 112 | 1.07 | a |
| 30 | 499.28 | 999.82 | 23 | 29 | 22 | 98 | 1.15 | a |
| 31 | 510.86 | 1022.97 | 290 | 47 | 27 | 127 | 1.54 | a |
| 32 | 562.62 | 1126.48 | 30 | 23 | 17 | 64 | 0.86 | a |
| 33 | 583.17 | 1167.56 | 1004 | 68 | 21 | 83 | 1.36 | a |
| 34 | 609.28 | 1219.77 | 692 | 59 | 22 | 93 | 1.32 | a |
| 35 | 661.69 | 1324.57 | 215 | 41 | 24 | 104 | 1.34 | a |
| 36 | 727.38 | 1455.93 | 209 | 38 | 21 | 70 | 1.62 | a |
| 37 | 755.52 | 1512.20 | 22 | 29 | 22 | 87 | 1.40 | a NET< CL |
| 38 | 768.30 | 1537.76 | 91 | 30 | 20 | 66 | 1.46 | a |
| 39 | 772.35 | 1545.85 | 37 | 20 | 13 | 37 | 0.76 | b |
| 40 | 786.26 | 1573.66 | 31 | 30 | 23 | 91 | 1.42 | a |
| 41 | 794.93 | 1591.00 | 92 | 28 | 16 | 53 | 1.17 | a |
| 42 | 835.77 | 1672.68 | 11 | 18 | 14 | 50 | 0.76 | a NET< CL |
| 43 | 860.47 | 1722.05 | 100 | 26 | 14 | 41 | 1.30 | a |
| 44 | 904.06 | 1809.22 | 15 | 24 | 19 | 67 | 1.69 | a NET< CL |
| 45 | 911.27 | 1823.63 | 641 | 55 | 18 | 60 | 1.52 | b |
| 46 | 933.86 | 1868.81 | 24 | 18 | 13 | 34 | 1.28 | a |
| 47 | 964.88 | 1930.83 | 112 | 28 | 16 | 46 | 1.64 | a |
| 48 | 968.93 | 1938.93 | 407 | 45 | 17 | 51 | 1.84 | b |
| 49 | 1120.26 | 2241.54 | 170 | 32 | 15 | 43 | 1.66 | a |
| 50 | 1238.21 | 2477.38 | 48 | 21 | 13 | 36 | 1.45 | a |
| 51 | 1377.92 | 2756.75 | 17 | 13 | 8 | 16 | 1.00 | a |
| 52 | 1460.64 | 2922.15 | 466 | 46 | 12 | 25 | 2.48 | a |
| 53 | 1764.29 | 3529.35 | 102 | 25 | 12 | 21 | 2.63 | a |

041077D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.70 | 38 | 57 | 46 | 36 | 58 | 46 | NET<CL |
| 2 | 63.48 | 43 | 41 | 32 | 38 | 41 | 32 | |
| 3 | 74.73 | 438 | 74 | 50 | 433 | 74 | 50 | |
| 4 | 77.04 | 830 | 84 | 50 | 827 | 84 | 50 | |
| 5 | 84.00 | 140 | 77 | 60 | 138 | 77 | 60 | |
| 6 | 87.15 | 382 | 76 | 53 | 380 | 76 | 53 | |
| 7 | 89.80 | 301 | 73 | 53 | 300 | 74 | 53 | |
| 8 | 92.98 | 324 | 81 | 60 | 311 | 81 | 60 | |
| 12 | 115.03 | 20 | 48 | 39 | 19 | 48 | 39 | NET<CL |
| 14 | 128.91 | 186 | 74 | 57 | 185 | 74 | 57 | |
| 15 | 143.80 | 36 | 40 | 32 | 34 | 41 | 32 | |
| 16 | 185.97 | 317 | 78 | 57 | 310 | 78 | 57 | |
| 19 | 238.58 | 2840 | 118 | 41 | 2832 | 118 | 41 | |
| 23 | 295.18 | 576 | 62 | 33 | 573 | 63 | 33 | |
| 26 | 338.18 | 573 | 60 | 30 | 571 | 61 | 31 | |
| 27 | 351.80 | 912 | 72 | 33 | 908 | 72 | 33 | |
| 31 | 510.86 | 290 | 47 | 27 | 249 | 48 | 30 | |
| 33 | 583.17 | 1004 | 68 | 21 | 999 | 68 | 22 | |
| 34 | 609.28 | 692 | 59 | 22 | 688 | 59 | 23 | |
| 43 | 860.47 | 100 | 26 | 14 | 99 | 26 | 14 | |
| 45 | 911.27 | 641 | 55 | 18 | 639 | 55 | 18 | |
| 48 | 968.93 | 408 | 45 | 17 | 406 | 45 | 17 | |
| 52 | 1460.64 | 466 | 46 | 12 | 460 | 46 | 13 | |
| 53 | 1764.29 | 102 | 25 | 12 | 101 | 25 | 12 | |

041077D02.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0405096-29 GS040601-7

Code: 041077D02A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 13:18:21 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.20e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.85e+002 g | Real Time | 1811 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041077D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[5.36E-04*En^-4.56E+00 + 1.37E+02*En^7.41E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------|--------------|----------|-----------------------|----------|-----------|----------------|----------------|
| Th-234 | Average:x | 1.06E+01 | +- | 2.71E+00 | | . | . | . | 3.92E+13 |
| | | 63.29 | 6.61E+00 | +- | 7.14E+00 | 1.17E+01 | 5.60E+00 | 3.92E+13 | |
| | | 92.50 | 1.12E+01 | +- | 2.94E+00 | 4.45E+00 | 2.18E+00 | 3.92E+13 | |
| U-235 | 143.76 | 4.34E-01 | +- | 5.25E-01 | 8.62E-01 | 4.14E-01 | 6.17E+12 | | |
| | 185.72 | I.D. | . | . | . | . | . | 6.17E+12 | |
| Pb-212 | Average:x | 1.28E+01 | +- | 5.27E-01 | | . | . | . | 1.67E+04 |
| | | 238.63 | 1.28E+01 | +- | 5.33E-01 | 3.86E-01 | 1.87E-01 | 1.67E+04 | |
| | | 300.09 | 1.30E+01 | +- | 3.68E+00 | 5.36E+00 | 2.59E+00 | 1.67E+04 | |
| Tl-208 | Average:x | 4.16E+00 | +- | 2.73E-01 | | . | . | . | 1.27E+14 |
| | | 277.36 | 3.00E+00 | +- | 1.32E+00 | 2.00E+00 | 9.58E-01 | 1.27E+14 | |
| | | 583.14 | 4.24E+00 | +- | 2.91E-01 | 1.95E-01 | 9.17E-02 | 1.27E+14 | |
| | | 860.47 | 3.83E+00 | +- | 1.02E+00 | 1.21E+00 | 5.53E-01 | 1.27E+14 | |
| Pb-214 | Average:x | 6.18E+00 | +- | 3.99E-01 | | . | . | . | 1.40E+07 |
| | | 295.22 | 6.49E+00 | +- | 7.08E-01 | 7.79E-01 | 3.74E-01 | 1.40E+07 | |
| | | 351.99 | 6.04E+00 | +- | 4.82E-01 | 4.58E-01 | 2.20E-01 | 1.40E+07 | |
| Ra-228 | Average:x | 1.28E+01 | +- | 7.32E-01 | | . | . | . | 5.04E+04 |
| | | 338.40 | 1.24E+01 | +- | 1.31E+00 | 1.39E+00 | 6.64E-01 | 5.04E+04 | |
| | | 911.07 | 1.26E+01 | +- | 1.08E+00 | 7.55E-01 | 3.51E-01 | 5.04E+04 | |
| | | 968.90 | 1.36E+01 | +- | 1.53E+00 | 1.25E+00 | 5.78E-01 | 5.04E+04 | |
| Cs-134 | Average:x | 2.19E-01 | +- | 9.15E-02 | | . | . | . | 1.81E+04 |
| | | 563.26 | 1.31E+00 | +- | 1.01E+00 | 1.59E+00 | 7.34E-01 | 1.81E+04 | |
| | | 604.66 | N | 3.95E-02 | +- | 1.15E-01 | 1.95E-01B | 9.24E-02 | 1.81E+04 |
| | | 795.76 | 5.09E-01 | +- | 1.52E-01 | 1.95E-01 | 9.02E-02 | 1.81E+04 | |
| Bi-214 | Average:x | 5.66E+00 | +- | 4.45E-01 | | . | . | . | 1.40E+07 |
| | | 609.32 | 5.53E+00 | +- | 4.77E-01 | 3.91E-01 | 1.84E-01 | 1.40E+07 | |

041077D02.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|----------|--------------------------|-------------|-----------|-------------------|-------------------|
| | 1120.28 | 6.54E+00 | +- 1.23E+00 | 1.28E+00 | 5.88E-01 | 1.40E+07 | |
| Cs-137 | 661.62 | 9.97E-01 | +- 1.91E-01 | 2.33E-01 | 1.10E-01 | 2.64E+05 | |
| Bi-212 | 727.17 | 1.41E+01 | +- 2.58E+00 | 2.97E+00 | 1.39E+00 | 1.67E+04 | |
| Co-56 | 1238.28 | 6.92E-01 | +- 3.05E-01 | 4.18E-01 | 1.90E-01 | 1.86E+03 | |
| K-40 | 1460.75 | 2.96E+01 | +- 2.94E+00 | 1.86E+00 | 8.41E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N | 1.86E-01 | +- 1.09E+00 | 1.84E+00 | 8.87E-01 | 3.80E+06 |
| Eu-155 | 105.31 | N | 7.84E-01 | +- 4.20E-01 | 6.62E-01 | 3.21E-01 | 4.35E+04 |
| Co-57 | 122.07 | N | 5.70E-03 | +- 1.03E-01 | 1.74E-01 | 8.47E-02 | 6.48E+03 |
| Ce-144 | 133.53 | N | 3.34E-02 | +- 7.49E-01 | 1.27E+00 | 6.15E-01 | 6.82E+03 |
| Ce-139 | 165.85 | N | 3.81E-02 | +- 1.18E-01 | 2.04E-01 | 9.86E-02 | 3.30E+03 |
| Th-227 | 236.00 | N | 1.66E-01 | +- 7.92E-01 | 1.33E+00B | 6.46E-01 | 1.90E+05 |
| Cr-51 | 320.07 | N | 6.45E-01 | +- 2.84E+00 | 4.95E+00 | 2.36E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 3.13E+00 | +- 8.55E+00 | 1.44E+01 | 6.89E+00 | 1.93E+02 |
| Sb-125 | 427.95 | N | 2.30E-02 | +- 3.36E-01 | 5.81E-01 | 2.77E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 6.33E-01 | +- 1.59E+00 | 2.69E+00 | 1.27E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N | 1.20E-01 | +- 1.94E-01 | 3.50E-01 | 1.66E-01 | 1.44E+03 |
| Ru-106 | 621.84 | N | 3.79E-01 | +- 1.11E+00 | 1.99E+00 | 9.40E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 5.27E-02 | +- 1.19E-01 | 2.02E-01B | 9.46E-02 | 6.00E+03 |
| Nb-94 | 702.50 | N | 1.72E-01 | +- 1.23E-01 | 1.94E-01 | 9.14E-02 | 1.78E+08 |
| Nb-95 | 765.82 | N | 1.00E-01 | +- 3.13E-01 | 5.50E-01R | 2.65E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 6.29E-02 | +- 1.73E-01 | 3.14E-01 | 1.47E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 5.81E-02 | +- 1.35E-01 | 2.29E-01 | 1.07E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.48E-01 | +- 1.61E-01 | 3.07E-01 | 1.43E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 1.63E+01 | +- 1.83E+01 | 2.98E+01 | 1.37E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 6.63E-01 | +- 5.72E-01 | 1.13E+00 | 5.25E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 3.05E-01 | +- 4.37E-01 | 8.26E-01 | 3.83E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 1.74E-01 | +- 4.03E-01 | 6.60E-01R | 3.12E-01 | 5.85E+03 |
| Na-22 | 1274.54 | N | 2.66E-02 | +- 1.14E-01 | 2.01E-01 | 9.14E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 1.15E-01 | +- 1.07E-01 | 1.69E-01 | 7.52E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 5.95E-01 | +- 5.53E-01 | 8.73E-01 | 3.92E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 6.24E-02 | +- 9.17E-02 | 1.91E-01 | 8.42E-02 | 6.31E+09 |

MEASURED TOTAL: 1.21E+02 +- 4.49E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 1 | 46.70 | 94.85 | 36 | 58 | 46 | 393 | 1.05 | Deleted |
| 3 | 74.73 | 150.88 | 433 | 74 | 50 | 507 | 0.80 | Unknown |
| 4 | 77.04 | 155.52 | 827 | 84 | 50 | 507 | 0.79 | Unknown |
| 5 | 84.00 | 169.43 | 138 | 77 | 60 | 611 | 1.18 | Unknown |
| 6 | 87.15 | 175.73 | 380 | 76 | 53 | 524 | 0.91 | Unknown |
| 7 | 89.80 | 181.02 | 300 | 74 | 53 | 524 | 0.92 | Unknown |
| 9 | 94.56 | 190.54 | 59 | 34 | 25 | 175 | 0.41 | Unknown |
| 10 | 97.77 | 196.96 | 0 | 613 | 504 | 6560 | 13.16 | Deleted |
| 11 | 99.61 | 200.64 | 59 | 55 | 44 | 385 | 0.74 | 1120DEsc |

041077D02.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 12 | 115.03 | 231.47 | 19 | 48 | 39 | 331 | 0.69 | Deleted |
| 13 | 119.79 | 241.00 | 9 | 30 | 24 | 166 | 0.40 | Deleted |
| 14 | 128.91 | 259.23 | 185 | 74 | 57 | 547 | 1.10 | Unknown |
| 17 | 188.31 | 378.01 | 10 | 34 | 28 | 191 | 0.44 | Deleted |
| 18 | 209.15 | 419.67 | 261 | 61 | 43 | 338 | 0.94 | Unknown |
| 20 | 241.49 | 484.35 | 495 | 81 | 56 | 465 | 1.53 | Unknown |
| 21 | 270.22 | 541.80 | 183 | 57 | 41 | 285 | 1.15 | Unknown |
| 25 | 327.77 | 656.87 | 193 | 49 | 33 | 183 | 1.22 | Unknown |
| 28 | 409.48 | 820.26 | 90 | 40 | 29 | 142 | 1.17 | Unknown |
| 29 | 462.86 | 927.00 | 162 | 39 | 24 | 112 | 1.07 | Unknown |
| 30 | 499.28 | 999.82 | 23 | 29 | 22 | 98 | 1.15 | Unknown |
| 31 | 510.86 | 1022.97 | 249 | 48 | 30 | 127 | 1.54 | Unknown |
| 37 | 755.52 | 1512.20 | 22 | 29 | 22 | 87 | 1.40 | Deleted |
| 38 | 768.30 | 1537.76 | 91 | 30 | 20 | 66 | 1.46 | Unknown |
| 39 | 772.35 | 1545.85 | 37 | 20 | 13 | 37 | 0.76 | Unknown |
| 40 | 786.26 | 1573.66 | 31 | 30 | 23 | 91 | 1.42 | Unknown |
| 42 | 835.77 | 1672.68 | 11 | 18 | 14 | 50 | 0.76 | Deleted |
| 44 | 904.06 | 1809.22 | 15 | 24 | 19 | 67 | 1.69 | Deleted |
| 46 | 933.86 | 1868.81 | 24 | 19 | 13 | 34 | 1.28 | Unknown |
| 47 | 964.88 | 1930.83 | 112 | 29 | 16 | 46 | 1.64 | Unknown |
| 51 | 1377.92 | 2756.75 | 17 | 13 | 8 | 16 | 1.00 | Unknown |
| 53 | 1764.29 | 3529.35 | 101 | 25 | 12 | 21 | 2.63 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo.11 / Solid

Sample ID: 0405096-30 GS040601-6

Code: 041214D04A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 07/01/2004 08:25:14 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.32E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 4.58E+001 g | Real Time | 1818 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041214D04.SPC |

Detector #: 4 (Detector 4)

Energy(keV) = -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 42.50 | 87.00 | 26 | 41 | 33 | 297 | 0.34 | a NET< CL |
| 2 | 46.66 | 95.29 | 125 | 76 | 60 | 714 | 0.77 | a |
| 3 | 53.19 | 108.33 | 54 | 66 | 53 | 628 | 0.68 | a |
| 4 | 55.93 | 113.80 | 18 | 42 | 34 | 314 | 0.36 | b NET< CL |
| 5 | 63.29 | 128.50 | 820 | 97 | 64 | 833 | 0.77 | a |
| 6 | 67.70 | 137.29 | 44 | 58 | 46 | 532 | 0.41 | a NET< CL |
| 7 | 74.82 | 151.51 | 1487 | 118 | 73 | 1080 | 0.77 | a HiResid Wide Pk |
| 8 | 77.08 | 156.03 | 2643 | 133 | 70 | 985 | 0.77 | b HiResid |
| 9 | 81.16 | 164.17 | 172 | 74 | 57 | 728 | 0.62 | c HiResid |
| 10 | 83.91 | 169.66 | 582 | 103 | 75 | 1042 | 0.99 | d HiResid |
| 11 | 87.17 | 176.16 | 1089 | 110 | 73 | 980 | 0.99 | e HiResid |
| 12 | 89.82 | 181.46 | 713 | 101 | 71 | 922 | 0.93 | f HiResid |
| 13 | 92.63 | 187.07 | 2663 | 132 | 67 | 831 | 1.01 | g HiResid |
| 14 | 94.27 | 190.33 | 420 | 144 | 113 | 1577 | 1.90 | h HiResid |
| 15 | 98.48 | 198.74 | 199 | 90 | 70 | 837 | 1.11 | i HiResid |
| 16 | 99.64 | 201.06 | 113 | 60 | 46 | 468 | 0.72 | j HiResid |
| 17 | 105.02 | 211.79 | 159 | 99 | 78 | 973 | 1.30 | a Wide Pk |
| 18 | 109.05 | 219.84 | 39 | 58 | 47 | 487 | 0.70 | b NET< CL |
| 19 | 112.86 | 227.44 | 88 | 40 | 29 | 240 | 0.39 | a |
| 20 | 115.34 | 232.40 | 49 | 58 | 47 | 481 | 0.58 | b |
| 21 | 120.75 | 243.19 | 35 | 72 | 59 | 634 | 0.96 | a NET< CL |
| 22 | 129.04 | 259.76 | 245 | 62 | 44 | 439 | 0.70 | a |
| 23 | 134.97 | 271.57 | 42 | 46 | 36 | 319 | 0.41 | a |

041214D04.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 24 | 143.85 | 289.31 | 364 | 74 | 52 | 547 | 0.85 | a |
| 25 | 154.11 | 309.80 | 165 | 68 | 52 | 545 | 0.90 | a |
| 26 | 163.52 | 328.59 | 105 | 47 | 35 | 304 | 0.47 | a |
| 27 | 185.85 | 373.16 | 2586 | 128 | 64 | 691 | 1.07 | a |
| 28 | 205.24 | 411.85 | 115 | 67 | 52 | 509 | 0.90 | a |
| 29 | 209.12 | 419.60 | 348 | 74 | 52 | 509 | 0.93 | b |
| 30 | 215.78 | 432.90 | 37 | 61 | 49 | 445 | 1.01 | a NET< CL |
| 31 | 236.02 | 473.31 | 124 | 53 | 40 | 320 | 0.88 | a HiResid |
| 32 | 238.54 | 478.32 | 4383 | 144 | 46 | 384 | 1.02 | b HiResid |
| 33 | 241.63 | 484.51 | 1581 | 105 | 57 | 512 | 1.36 | c HiResid |
| 34 | 256.14 | 513.47 | 50 | 36 | 27 | 179 | 0.51 | a |
| 35 | 258.64 | 518.46 | 72 | 56 | 44 | 358 | 0.90 | b |
| 36 | 270.15 | 541.44 | 522 | 87 | 61 | 510 | 1.71 | a Wide Pk |
| 37 | 277.36 | 555.83 | 106 | 52 | 39 | 310 | 0.82 | a |
| 38 | 295.12 | 591.29 | 2558 | 115 | 45 | 344 | 1.06 | a |
| 39 | 299.96 | 600.93 | 238 | 52 | 35 | 246 | 0.84 | b |
| 40 | 323.65 | 648.24 | 39 | 42 | 33 | 221 | 0.78 | a |
| 41 | 327.87 | 656.66 | 273 | 66 | 47 | 353 | 1.30 | b |
| 42 | 338.14 | 677.16 | 863 | 77 | 41 | 307 | 1.04 | a |
| 43 | 351.71 | 704.26 | 4371 | 141 | 40 | 270 | 1.19 | a |
| 44 | 388.66 | 778.01 | 59 | 50 | 39 | 265 | 1.09 | a |
| 45 | 401.63 | 803.91 | 31 | 40 | 32 | 204 | 0.74 | a NET< CL |
| 46 | 409.39 | 819.39 | 85 | 36 | 26 | 148 | 0.65 | a |
| 47 | 462.71 | 925.83 | 244 | 55 | 37 | 241 | 1.40 | a |
| 48 | 479.88 | 960.10 | 36 | 49 | 39 | 246 | 1.63 | a NET< CL |
| 49 | 510.50 | 1021.23 | 378 | 58 | 36 | 211 | 1.64 | a |
| 50 | 561.99 | 1124.02 | 54 | 40 | 30 | 170 | 1.36 | a |
| 51 | 582.95 | 1165.86 | 1185 | 80 | 33 | 195 | 1.45 | a |
| 52 | 609.07 | 1217.99 | 2988 | 115 | 30 | 160 | 1.50 | a |
| 53 | 665.30 | 1330.26 | 87 | 42 | 31 | 170 | 1.45 | a |
| 54 | 727.04 | 1453.50 | 246 | 45 | 26 | 133 | 1.53 | a |
| 55 | 768.04 | 1535.34 | 252 | 48 | 30 | 158 | 1.84 | a |
| 56 | 772.18 | 1543.60 | 62 | 33 | 24 | 115 | 1.26 | b |
| 57 | 785.73 | 1570.67 | 76 | 36 | 26 | 135 | 1.51 | a |
| 58 | 794.24 | 1587.64 | 113 | 43 | 31 | 150 | 2.13 | a |
| 59 | 805.84 | 1610.80 | 58 | 27 | 18 | 73 | 1.12 | a |
| 60 | 839.39 | 1677.78 | 27 | 36 | 28 | 146 | 1.59 | a NET< CL |
| 61 | 860.13 | 1719.18 | 127 | 37 | 24 | 100 | 1.82 | a |
| 62 | 910.88 | 1820.48 | 819 | 65 | 25 | 111 | 1.84 | a |
| 63 | 933.90 | 1866.45 | 143 | 34 | 20 | 77 | 1.64 | a |
| 64 | 964.30 | 1927.13 | 179 | 43 | 28 | 118 | 2.29 | a |
| 65 | 968.49 | 1935.50 | 445 | 52 | 24 | 101 | 1.95 | b |
| 66 | 1000.55 | 1999.50 | 114 | 31 | 19 | 68 | 1.83 | a |
| 67 | 1119.80 | 2237.53 | 586 | 54 | 21 | 78 | 1.93 | a |
| 68 | 1155.26 | 2308.33 | 50 | 25 | 17 | 62 | 1.69 | a |
| 69 | 1237.67 | 2472.85 | 184 | 39 | 23 | 92 | 2.08 | a |
| 70 | 1280.85 | 2559.04 | 29 | 19 | 13 | 35 | 1.37 | a |
| 71 | 1377.18 | 2751.35 | 137 | 36 | 22 | 83 | 2.21 | a |
| 72 | 1400.77 | 2798.43 | 33 | 31 | 23 | 81 | 2.89 | a |

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 73 | 1407.82 | 2812.51 | 79 | 28 | 18 | 59 | 2.06 | b |
| 74 | 1459.76 | 2916.18 | 93 | 34 | 23 | 81 | 2.63 | a |
| 75 | 1508.47 | 3013.43 | 70 | 33 | 24 | 77 | 3.34 | a |
| 76 | 1589.41 | 3175.01 | 64 | 44 | 34 | 140 | 3.95 | a Wide Pk |
| 77 | 1728.42 | 3452.50 | 88 | 29 | 18 | 45 | 3.32 | a |
| 78 | 1763.74 | 3523.01 | 461 | 48 | 17 | 42 | 2.98 | a |
| 79 | 1846.58 | 3688.37 | 33 | 20 | 13 | 30 | 2.23 | a |

041214D04.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 2 | 46.66 | 125 | 76 | 60 | 123 | 76 | 60 | |
| 3 | 53.19 | 54 | 66 | 53 | 53 | 66 | 53 | NET<CL |
| 5 | 63.29 | 820 | 97 | 64 | 816 | 97 | 64 | |
| 6 | 67.70 | 44 | 58 | 46 | 39 | 58 | 47 | NET<CL |
| 7 | 74.82 | 1487 | 118 | 73 | 1483 | 118 | 73 | |
| 8 | 77.08 | 2643 | 133 | 70 | 2638 | 133 | 70 | |
| 11 | 87.17 | 1089 | 110 | 73 | 1089 | 110 | 73 | |
| 12 | 89.82 | 713 | 101 | 71 | 713 | 101 | 71 | |
| 13 | 92.63 | 2663 | 132 | 67 | 2652 | 132 | 67 | |
| 20 | 115.34 | 49 | 58 | 47 | 47 | 58 | 47 | |
| 27 | 185.85 | 2586 | 128 | 64 | 2578 | 128 | 64 | |
| 32 | 238.54 | 4383 | 144 | 46 | 4378 | 144 | 46 | |
| 42 | 338.14 | 863 | 77 | 41 | 861 | 77 | 41 | |
| 43 | 351.71 | 4371 | 141 | 40 | 4367 | 141 | 40 | |
| 49 | 510.50 | 378 | 58 | 36 | 339 | 59 | 38 | |
| 51 | 582.95 | 1185 | 80 | 33 | 1183 | 80 | 34 | |
| 52 | 609.07 | 2988 | 115 | 30 | 2985 | 115 | 31 | |
| 62 | 910.88 | 819 | 65 | 25 | 818 | 65 | 26 | |
| 74 | 1459.76 | 93 | 34 | 23 | 88 | 34 | 23 | |

041214D04.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0405096-30 GS040601-6

Code: 041214D04A

Sampling Start: 05/07/2004 12:00:00 | Counting Start: 07/01/2004 08:25:14
Sampling Stop: 05/07/2004 12:00:00 | Decay Time 1.32e+003 Hrs
Buildup Time 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 4.58e+001 g | Real Time 1818 Sec
Collection Efficiency 1.0000 | Spectrum File 041214D04.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | Critical MDA | Halflife Level (hrs) |
|---------|-----------|----------|--------------|----------|-----------------------|-----------|--------------|----------------------|
| Th-234 | Average:x | 3.09E+02 | 63.29 | 3.13E+02 | +- 1.42E+01 | | | 3.92E+13 |
| | | 92.50 | 3.09E+02 | 3.72E+01 | +- 1.53E+01 | 5.05E+01 | 2.47E+01 | 3.92E+13 |
| Eu-155 | 105.31 | 4.18E+00 | 115.18 | 4.29E+01 | +- 2.59E+00 | 1.60E+01 | 7.84E+00 | 3.92E+13 |
| Pb-212 | Average:x | 6.72E+01 | 238.63 | 6.75E+01 | +- 2.18E+00 | 4.18E+00 | 2.06E+00 | 4.35E+04 |
| | | 300.09 | 300.09 | 5.87E+01 | +- 2.21E+00 | 1.46E+00 | 7.07E-01 | 1.67E+04 |
| Ce-144 | 133.53 | 2.09E+00 | 133.53 | 2.26E+00 | +- 1.29E+01 | 1.79E+01 | 8.61E+00 | 1.67E+04 |
| U-235 | Average:x | 1.40E+01 | 143.76 | 1.60E+01 | +- 2.51E+00 | 3.70E+00 | 1.78E+00 | 6.82E+03 |
| | | 163.35 | 163.35 | 1.02E+01 | +- 3.24E+00 | 4.69E+00 | 2.29E+00 | 6.17E+12 |
| Th-227 | 236.00 | 6.33E+00 | 185.72 | I.D. | +- 2.73E+00 | 7.14E+00 | 3.44E+00 | 6.17E+12 |
| Tl-208 | Average:x | 1.89E+01 | 205.31 | 1.30E+01 | +- 1.24E+00 | 1.22E+01 | 5.93E+00 | 6.17E+12 |
| | | 277.36 | 236.00 | 6.33E+00 | +- 5.87E+00 | 4.22E+00 | 2.04E+00 | 1.90E+05 |
| Pb-214 | Average:x | 1.89E+01 | 583.14 | 1.92E+01 | +- 1.30E+00 | 1.13E+00 | 5.45E-01 | 1.27E+14 |
| | | 860.47 | 860.47 | 1.98E+01 | +- 5.73E+00 | 7.87E+00 | 3.72E+00 | 1.27E+14 |
| Ra-228 | Average:x | 6.50E+01 | 295.22 | 1.00E+02 | +- 3.44E+00 | 3.63E+00 | 1.76E+00 | 1.40E+07 |
| | | 351.99 | 351.99 | 1.03E+02 | +- 4.51E+00 | 1.95E+00 | 9.45E-01 | 1.40E+07 |
| | | 338.40 | 338.40 | 6.58E+01 | +- 5.88E+00 | 6.46E+00 | 3.13E+00 | 5.04E+04 |
| | | 911.07 | 911.07 | 6.59E+01 | +- 5.24E+00 | 4.34E+00 | 2.06E+00 | 5.04E+04 |

041214D04.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|---|--------------|-------------|-----------------------|---|-----------|----------------|----------------|
| Cs-134 | | | 968.90 | 6.18E+01 | +- 7.17E+00 | | 7.19E+00 | 3.41E+00 | 5.04E+04 |
| | Average:x | | 2.61E+00 | +- 9.35E-01 | | | . | . | 1.81E+04 |
| | | | 563.26 | 9.07E+00 | +- 6.64E+00 | | 1.06E+01 | 5.07E+00 | 1.81E+04 |
| | | | 604.66 | N-4.25E-01 | +- 8.94E+00 | | 1.48E+01P | 7.36E+00 | 1.81E+04 |
| | | | 795.76 | 2.51E+00 | +- 9.50E-01 | | 1.42E+00 | 6.78E-01 | 1.81E+04 |
| Bi-214 | | | Average:x | 9.27E+01 | +- 3.31E+00 | | . | . | 1.40E+07 |
| | | | 609.32 | 9.23E+01 | +- 3.57E+00 | | 1.97E+00 | 9.44E-01 | 1.40E+07 |
| | | | 1120.28 | 9.53E+01 | +- 8.86E+00 | | 7.13E+00 | 3.34E+00 | 1.40E+07 |
| Bi-212 | | | 727.17 | 6.60E+01 | +- 1.20E+01 | | 1.47E+01 | 7.01E+00 | 1.67E+04 |
| Pa-234m | | | 1001.03 | 4.30E+02 | +- 1.17E+02 | | 1.51E+02 | 7.06E+01 | 3.92E+13 |
| Eu-152 | | | 1408.08 | 1.14E+01 | +- 4.10E+00 | | 5.65E+00 | 2.63E+00 | 1.17E+05 |
| K-40 | | | 1460.75 | 2.48E+01 | +- 9.54E+00 | | 1.38E+01 | 6.54E+00 | 1.12E+13 |
| Am-241 | | | 59.54 | N 1.14E+00 | +- 3.27E+00 | | 5.46E+00 | 2.66E+00 | 3.80E+06 |
| Co-57 | | | 122.07 | N-1.10E-03 | +- 4.14E-01 | | 6.98E-01 | 3.40E-01 | 6.48E+03 |
| Ce-139 | | | 165.85 | N-5.61E-02 | +- 5.03E-01 | | 8.53E-01b | 4.15E-01 | 3.30E+03 |
| Cr-51 | | | 320.07 | N-1.08E+01 | +- 1.47E+01 | | 2.59E+01B | 1.25E+01 | 6.65E+02 |
| I-131 | | | 364.48 | N 2.83E+01 | +- 5.83E+01 | | 9.72E+01 | 4.69E+01 | 1.93E+02 |
| Sb-125 | | | 427.95 | N 1.66E-01 | +- 1.54E+00 | | 2.62E+00 | 1.26E+00 | 2.43E+04 |
| Be-7 | | | 477.56 | N-7.32E+00 | +- 9.41E+00 | | 1.66E+01 | 8.02E+00 | 1.28E+03 |
| Sb-124 | | | 602.71 | N-9.79E-02 | +- 1.09E+00 | | 1.88E+00B | 9.03E-01 | 1.44E+03 |
| Ru-106 | | | 621.84 | N-2.44E+00 | +- 5.75E+00 | | 1.01E+01 | 4.84E+00 | 8.84E+03 |
| Ag-110M | | | 657.75 | N-8.03E-01 | +- 7.06E-01 | | 1.28E+00 | 6.15E-01 | 6.00E+03 |
| Cs-137 | | | 661.62 | N 8.18E-01 | +- 1.03E+00 | | 1.64E+00R | 7.95E-01 | 2.64E+05 |
| Nb-94 | | | 702.50 | N 1.09E+00 | +- 6.27E-01 | | 9.77E-01 | 4.66E-01 | 1.78E+08 |
| Nb-95 | | | 765.82 | N-2.82E+00 | +- 1.99E+00 | | 3.64E+00R | 1.78E+00 | 1.54E+03 |
| Co-58 | | | 810.75 | N 0.00E+00 | +- 9.04E-01 | | 1.57E+00b | 7.43E-01 | 1.70E+03 |
| Mn-54 | | | 834.81 | N-2.13E-02 | +- 7.83E-01 | | 1.35E+00 | 6.45E-01 | 7.49E+03 |
| Sc-46 | | | 889.26 | N 3.71E-01 | +- 9.42E-01 | | 1.59E+00 | 7.54E-01 | 2.01E+03 |
| Eu-154 | | | 1004.80 | N-3.38E+00 | +- 5.24E+00 | | 9.48E+00R | 4.57E+00 | 7.45E+04 |
| Fe-59 | | | 1099.22 | N-4.77E+00 | +- 2.60E+00 | | 5.11E+00 | 2.42E+00 | 1.08E+03 |
| Zn-65 | | | 1115.52 | N-2.43E+00 | +- 2.16E+00 | | 4.11E+00R | 1.98E+00 | 5.85E+03 |
| Co-56 | | | 1238.28 | N 7.26E-01 | +- 4.21E+00 | | 7.03E+00R | 3.42E+00 | 1.86E+03 |
| Na-22 | | | 1274.54 | N-3.80E-01 | +- 6.52E-01 | | 1.20E+00B | 5.63E-01 | 2.28E+04 |
| Co-60 | | | 1332.51 | N 1.66E-01 | +- 7.46E-01 | | 1.28E+00 | 6.03E-01 | 4.62E+04 |
| Al-26 | | | 1808.65 | N-5.01E-01 | +- 6.73E-01 | | 1.30E+00 | 5.98E-01 | 6.31E+09 |

MEASURED TOTAL: 1.25E+03 +- 2.52E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. | ENERGY # | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-----|----------|-----------------|------------|---------------|-------------|------------|------------|---------|
| 1 | 42.50 | 87.00 | 26 | 41 | 33 | 297 | 0.34 | Deleted |
| 2 | 46.66 | 95.29 | 123 | 76 | 60 | 714 | 0.77 | Unknown |
| 3 | 53.19 | 108.33 | 53 | 66 | 53 | 628 | 0.68 | Deleted |
| 4 | 55.93 | 113.80 | 18 | 42 | 34 | 314 | 0.36 | Deleted |
| 6 | 67.70 | 137.29 | 39 | 58 | 47 | 532 | 0.41 | Deleted |

041214D04.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 7 | 74.82 | 151.51 | 1483 | 118 | 73 | 1080 | 0.77 | Unknown |
| 8 | 77.08 | 156.03 | 2638 | 133 | 70 | 985 | 0.77 | Unknown |
| 9 | 81.16 | 164.17 | 172 | 74 | 57 | 728 | 0.62 | Unknown |
| 10 | 83.91 | 169.66 | 582 | 103 | 75 | 1042 | 0.99 | Unknown |
| 11 | 87.17 | 176.16 | 1089 | 110 | 73 | 980 | 0.99 | Unknown |
| 12 | 89.82 | 181.46 | 713 | 101 | 71 | 922 | 0.93 | Unknown |
| 14 | 94.27 | 190.33 | 420 | 144 | 113 | 1577 | 1.90 | Unknown |
| 15 | 98.48 | 198.74 | 199 | 90 | 70 | 837 | 1.11 | 1120DEsc |
| 16 | 99.64 | 201.06 | 113 | 60 | 46 | 468 | 0.72 | 1120DEsc |
| 18 | 109.05 | 219.84 | 39 | 58 | 47 | 487 | 0.70 | Deleted |
| 19 | 112.86 | 227.44 | 88 | 40 | 29 | 240 | 0.39 | Unknown |
| 21 | 120.75 | 243.19 | 35 | 72 | 59 | 634 | 0.96 | Deleted |
| 22 | 129.04 | 259.76 | 245 | 62 | 44 | 439 | 0.70 | Unknown |
| 25 | 154.11 | 309.80 | 165 | 68 | 52 | 545 | 0.90 | Unknown |
| 29 | 209.12 | 419.60 | 348 | 74 | 52 | 509 | 0.93 | Unknown |
| 30 | 215.78 | 432.90 | 37 | 61 | 49 | 445 | 1.01 | Deleted |
| 33 | 241.63 | 484.51 | 1581 | 105 | 57 | 512 | 1.36 | Unknown |
| 34 | 256.14 | 513.47 | 50 | 36 | 27 | 179 | 0.51 | Unknown |
| 35 | 258.64 | 518.46 | 72 | 56 | 44 | 358 | 0.90 | Unknown |
| 36 | 270.15 | 541.44 | 522 | 87 | 61 | 510 | 1.71 | Unknown |
| 40 | 323.65 | 648.24 | 39 | 42 | 33 | 221 | 0.78 | Unknown |
| 41 | 327.87 | 656.66 | 273 | 66 | 47 | 353 | 1.30 | Unknown |
| 44 | 388.66 | 778.01 | 59 | 50 | 39 | 265 | 1.09 | Unknown |
| 45 | 401.63 | 803.91 | 31 | 40 | 32 | 204 | 0.74 | Deleted |
| 46 | 409.39 | 819.39 | 85 | 36 | 26 | 148 | 0.65 | Unknown |
| 47 | 462.71 | 925.83 | 244 | 55 | 37 | 241 | 1.40 | Unknown |
| 48 | 479.88 | 960.10 | 36 | 49 | 39 | 246 | 1.63 | Deleted |
| 49 | 510.50 | 1021.23 | 339 | 59 | 38 | 211 | 1.64 | Unknown |
| 53 | 665.30 | 1330.26 | 87 | 42 | 31 | 170 | 1.45 | Unknown |
| 55 | 768.04 | 1535.34 | 252 | 48 | 30 | 158 | 1.84 | Unknown |
| 56 | 772.18 | 1543.60 | 62 | 33 | 24 | 115 | 1.26 | Unknown |
| 57 | 785.73 | 1570.67 | 76 | 36 | 26 | 135 | 1.51 | Unknown |
| 59 | 805.84 | 1610.80 | 58 | 27 | 18 | 73 | 1.12 | Unknown |
| 60 | 839.39 | 1677.78 | 27 | 36 | 28 | 146 | 1.59 | Deleted |
| 63 | 933.90 | 1866.45 | 143 | 34 | 20 | 77 | 1.64 | Unknown |
| 64 | 964.30 | 1927.13 | 179 | 43 | 28 | 118 | 2.29 | Unknown |
| 68 | 1155.26 | 2308.33 | 50 | 25 | 17 | 62 | 1.69 | Unknown |
| 69 | 1237.67 | 2472.85 | 184 | 39 | 23 | 92 | 2.08 | Unknown |
| 70 | 1280.85 | 2559.04 | 29 | 19 | 13 | 35 | 1.37 | Unknown |
| 71 | 1377.18 | 2751.35 | 137 | 36 | 22 | 83 | 2.21 | Unknown |
| 72 | 1400.77 | 2798.43 | 33 | 31 | 23 | 81 | 2.89 | Unknown |
| 75 | 1508.47 | 3013.43 | 70 | 33 | 24 | 77 | 3.34 | Unknown |
| 76 | 1589.41 | 3175.01 | 64 | 44 | 34 | 140 | 3.95 | Unknown |
| 77 | 1728.42 | 3452.50 | 88 | 29 | 18 | 45 | 3.32 | Unknown |
| 78 | 1763.74 | 3523.01 | 461 | 48 | 17 | 42 | 2.98 | Unknown |
| 79 | 1846.58 | 3688.37 | 33 | 20 | 13 | 30 | 2.23 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-31 GS040601-7

Code: 041061D08A

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 12:41:48 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.20E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.72E+002 g | Real Time | 1807 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041061D08.SPC |

Detector #: 8 (Detector 8)
 Energy(keV) = -0.38 + 0.500*Ch + -3.43E-07*Ch^2 + 1.39E-10*Ch^3 06/26/2004
 FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|---------------------------------|
| 1 | 46.40 | 93.49 | 153 | 53 | 39 | 307 | 0.78 | a |
| 2 | 52.96 | 106.59 | 33 | 31 | 24 | 155 | 0.38 | a |
| 3 | 63.30 | 127.26 | 243 | 78 | 59 | 637 | 1.05 | a |
| 4 | 73.09 | 146.83 | 78 | 95 | 77 | 932 | 1.27 | a Wide Pk |
| 5 | 74.82 | 150.29 | 964 | 90 | 54 | 583 | 0.87 | b |
| 6 | 77.04 | 154.73 | 1531 | 102 | 54 | 583 | 0.82 | c |
| 7 | 84.17 | 168.98 | 256 | 82 | 62 | 607 | 1.35 | a HiResid Wide Pk |
| 8 | 87.22 | 175.07 | 541 | 76 | 50 | 455 | 1.05 | b HiResid |
| 9 | 89.80 | 180.23 | 382 | 72 | 50 | 455 | 0.94 | c HiResid |
| 10 | 93.07 | 186.77 | 574 | 83 | 56 | 531 | 1.14 | d HiResid |
| 11 | 94.93 | 190.48 | 74 | 41 | 30 | 228 | 0.42 | e HiResid |
| 12 | 99.26 | 199.13 | 87 | 64 | 50 | 431 | 1.22 | a |
| 13 | 105.37 | 211.34 | 119 | 73 | 57 | 516 | 1.26 | a |
| 14 | 108.47 | 217.55 | 57 | 37 | 28 | 194 | 0.42 | b |
| 15 | 115.12 | 230.84 | 38 | 44 | 34 | 263 | 0.66 | a |
| 16 | 128.99 | 258.55 | 139 | 61 | 46 | 395 | 1.01 | a |
| 17 | 116.81 | 234.21 | 0 | 2842 | 2337 | 27036 | 72.33 | a NET< CL HiResid Wide Pk |
| 18 | 185.97 | 372.45 | 362 | 60 | 38 | 266 | 1.01 | a |
| 19 | 196.12 | 392.74 | 16 | 31 | 25 | 154 | 0.48 | a NET< CL |
| 20 | 209.33 | 419.16 | 195 | 51 | 36 | 234 | 0.93 | a |
| 21 | 238.66 | 477.78 | 2034 | 100 | 35 | 225 | 0.94 | a |

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 22 | 241.66 | 483.79 | 421 | 67 | 44 | 300 | 1.30 | b |
| 23 | 270.16 | 540.77 | 198 | 60 | 44 | 265 | 1.64 | a |
| 24 | 277.15 | 554.74 | 97 | 43 | 31 | 169 | 1.17 | a |
| 25 | 295.24 | 590.90 | 574 | 59 | 28 | 145 | 1.00 | a |
| 26 | 300.12 | 600.66 | 129 | 41 | 28 | 145 | 0.91 | b |
| 27 | 328.17 | 656.74 | 74 | 34 | 24 | 118 | 0.87 | a |
| 28 | 338.37 | 677.13 | 348 | 50 | 27 | 137 | 0.96 | a |
| 29 | 352.00 | 704.38 | 1006 | 71 | 26 | 130 | 1.13 | a |
| 30 | 409.38 | 819.10 | 34 | 24 | 17 | 69 | 0.89 | a |
| 31 | 462.98 | 926.27 | 139 | 34 | 21 | 79 | 1.24 | a |
| 32 | 510.78 | 1021.84 | 241 | 43 | 25 | 106 | 1.55 | a |
| 33 | 583.29 | 1166.80 | 630 | 55 | 18 | 67 | 1.17 | a |
| 34 | 609.38 | 1218.95 | 784 | 60 | 18 | 63 | 1.34 | a |
| 35 | 661.63 | 1323.40 | 182 | 37 | 21 | 90 | 1.37 | a |
| 36 | 727.24 | 1454.55 | 101 | 29 | 17 | 62 | 1.10 | a |
| 37 | 768.11 | 1536.22 | 36 | 19 | 12 | 34 | 0.82 | a |
| 38 | 769.48 | 1538.97 | 7 | 17 | 13 | 40 | 0.92 | b NET< CL |
| 39 | 795.06 | 1590.08 | 51 | 23 | 15 | 44 | 1.26 | a |
| 40 | 860.50 | 1720.83 | 83 | 24 | 13 | 34 | 1.55 | a |
| 41 | 911.04 | 1821.82 | 387 | 43 | 14 | 42 | 1.33 | a |
| 42 | 933.78 | 1867.23 | 24 | 16 | 10 | 23 | 1.10 | a |
| 43 | 964.87 | 1929.34 | 105 | 27 | 15 | 35 | 2.17 | a |
| 44 | 968.85 | 1937.28 | 284 | 37 | 12 | 27 | 1.57 | b |
| 45 | 1120.41 | 2239.89 | 148 | 29 | 12 | 29 | 1.74 | a |
| 46 | 1238.29 | 2475.11 | 42 | 21 | 14 | 35 | 2.01 | a |
| 47 | 1377.60 | 2752.88 | 23 | 18 | 13 | 29 | 1.90 | a |
| 48 | 1461.00 | 2919.05 | 389 | 42 | 11 | 23 | 2.10 | a |
| 49 | 1730.65 | 3455.66 | 23 | 14 | 9 | 13 | 2.41 | a |
| 50 | 1765.68 | 3525.28 | 115 | 23 | 6 | 6 | 2.42 | a |
| 51 | 1849.03 | 3690.85 | 17 | 12 | 8 | 11 | 1.75 | a |

041061D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET080625.BKG (0418003-38 Weekly Background)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.40 | 153 | 53 | 39 | 134 | 54 | 40 | |
| 2 | 52.96 | 33 | 31 | 24 | 31 | 31 | 24 | |
| 3 | 63.30 | 243 | 78 | 59 | 229 | 78 | 59 | |
| 4 | 73.09 | 78 | 95 | 77 | 72 | 95 | 77 | NET<CL |
| 6 | 77.04 | 1531 | 102 | 54 | 1527 | 102 | 54 | |
| 7 | 84.17 | 256 | 82 | 62 | 251 | 82 | 62 | |
| 8 | 87.22 | 541 | 76 | 50 | 541 | 76 | 50 | |
| 10 | 93.07 | 574 | 83 | 56 | 549 | 83 | 57 | |
| 18 | 185.97 | 362 | 60 | 38 | 350 | 60 | 39 | |
| 21 | 238.66 | 2034 | 100 | 35 | 2026 | 100 | 35 | |
| 23 | 270.16 | 198 | 60 | 44 | 197 | 60 | 44 | |
| 25 | 295.24 | 575 | 59 | 28 | 573 | 59 | 28 | |
| 28 | 338.37 | 348 | 50 | 27 | 346 | 50 | 28 | |
| 29 | 352.00 | 1006 | 71 | 26 | 1004 | 71 | 26 | |
| 32 | 510.78 | 241 | 43 | 25 | 189 | 44 | 28 | |
| 33 | 583.29 | 630 | 55 | 18 | 627 | 55 | 19 | |
| 34 | 609.38 | 784 | 60 | 18 | 781 | 60 | 19 | |
| 41 | 911.04 | 387 | 43 | 14 | 385 | 43 | 15 | |
| 45 | 1120.41 | 148 | 29 | 12 | 147 | 29 | 13 | |
| 48 | 1461.00 | 389 | 42 | 11 | 381 | 42 | 12 | |
| 50 | 1765.68 | 115 | 23 | 6 | 114 | 23 | 6 | |

041061D08.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0405096-31 GS040601-7

Code: 041061D08A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 12:41:48 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time | 1.20e+003 Hrs |
| Buildup Time. | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.72e+002 g | Real Time | 1807 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041061D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | | N | ENERGY (keV) | E T | Concentration (pCi/g) | | Critical MDA | Halflife Level (hrs) |
|---------|-----------|----------|--------------|----------|-----------------------|-----------|--------------|----------------------|
| Th-234 | Average:x | 1.25E+01 | +- | 1.75E+00 | | | | 3.92E+13 |
| | 63.29 | 9.71E+00 | +- | 3.30E+00 | 5.13E+00 | 2.51E+00 | 3.92E+13 | |
| | 92.50 | 1.36E+01 | +- | 2.07E+00 | 2.88E+00 | 1.41E+00 | 3.92E+13 | |
| Eu-155 | 105.31 | 7.84E-01 | +- | 4.79E-01 | 7.70E-01 | 3.76E-01 | 3.76E-01 | 4.35E+04 |
| Pb-212 | Average:x | 9.98E+00 | +- | 4.85E-01 | | | | 1.67E+04 |
| | 115.18 | 9.38E+00 | +- | 1.08E+01 | 1.77E+01 | 8.51E+00 | 8.51E+00 | 1.67E+04 |
| | 238.63 | 9.98E+00 | +- | 4.92E-01 | 3.62E-01 | 1.74E-01 | 1.74E-01 | 1.67E+04 |
| | 300.09 | 9.95E+00 | +- | 3.15E+00 | 4.53E+00 | 2.16E+00 | 2.16E+00 | 1.67E+04 |
| U-235 | 143.76 | N | 3.44E-01 | +- | 6.60E-01 | 1.10E+00 | 5.31E-01 | 6.17E+12 |
| | 185.72 | I.D. | | | | | | 6.17E+12 |
| Tl-208 | Average:x | 3.04E+00 | +- | 2.52E-01 | | | | 1.27E+14 |
| | 277.36 | 3.49E+00 | +- | 1.54E+00 | 2.36E+00 | 1.13E+00 | 1.13E+00 | 1.27E+14 |
| | 583.14 | 2.99E+00 | +- | 2.62E-01 | 1.93E-01 | 8.98E-02 | 8.98E-02 | 1.27E+14 |
| | 860.47 | 3.68E+00 | +- | 1.07E+00 | 1.29E+00 | 5.86E-01 | 5.86E-01 | 1.27E+14 |
| Pb-214 | Average:x | 7.24E+00 | +- | 4.21E-01 | | | | 1.40E+07 |
| | 295.22 | 7.07E+00 | +- | 7.27E-01 | 7.31E-01 | 3.49E-01 | 3.49E-01 | 1.40E+07 |
| | 351.99 | 7.33E+00 | +- | 5.17E-01 | 3.98E-01 | 1.89E-01 | 1.89E-01 | 1.40E+07 |
| Ra-228 | Average:x | 9.05E+00 | +- | 6.66E-01 | | | | 5.04E+04 |
| | 338.40 | 8.20E+00 | +- | 1.19E+00 | 1.37E+00 | 6.52E-01 | 6.52E-01 | 5.04E+04 |
| | 911.07 | 8.72E+00 | +- | 9.75E-01 | 7.24E-01 | 3.31E-01 | 3.31E-01 | 5.04E+04 |
| | 968.90 | 1.10E+01 | +- | 1.43E+00 | 1.04E+00 | 4.70E-01 | 4.70E-01 | 5.04E+04 |
| Cs-137 | 661.62 | 9.57E-01 | +- | 1.95E-01 | 2.33E-01 | 1.10E-01 | 1.10E-01 | 2.64E+05 |
| Bi-212 | 727.17 | 7.76E+00 | +- | 2.20E+00 | 2.79E+00 | 1.29E+00 | 1.29E+00 | 1.67E+04 |
| Cs-134 | Average:x | 1.86E-01 | +- | 9.38E-02 | | | | 1.81E+04 |
| | 795.76 | 3.24E-01 | +- | 1.44E-01 | 2.02E-01 | 9.24E-02 | 9.24E-02 | 1.81E+04 |

041061D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------------|-------------------|-------------------|
| Bi-214 | 604.66 | N | 8.39E-02 | +- 1.24E-01 | 2.05E-01B | 9.66E-02 | 1.81E+04 |
| | Average:x | | 6.59E+00 | +- 1.18E+00 | . | . | 1.40E+07 |
| | 1120.28 | | 6.59E+00 | +- 1.28E+00 | 1.25E+00 | 5.64E-01 | 1.40E+07 |
| | 609.32 | | 6.59E+00 | +- 3.00E+00 | 4.71E+00 | 2.34E+00 | 1.40E+07 |
| Co-56 | 1238.28 | | 7.12E-01 | +- 3.59E-01 | 5.14E-01 | 2.34E-01 | 1.86E+03 |
| K-40 | 1460.75 | | 2.91E+01 | +- 3.19E+00 | 2.10E+00 | 9.45E-01 | 1.12E+13 |
| Am-241 | 59.54 | N | 4.95E-01 | +- 2.84E-01 | 4.51E-01B | 2.19E-01 | 3.80E+06 |
| Co-57 | 122.07 | N | 1.22E-02 | +- 8.76E-02 | 1.50E-01 | 7.24E-02 | 6.48E+03 |
| Ce-144 | 133.53 | N | 2.46E-01 | +- 7.07E-01 | 1.19E+00 | 5.73E-01 | 6.82E+03 |
| Ce-139 | 165.85 | N | 1.36E-01 | +- 1.27E-01 | 2.25E-01 | 1.09E-01 | 3.30E+03 |
| Th-227 | 236.00 | N | 4.77E-01 | +- 7.02E-01 | 1.16E+00B | 5.58E-01 | 1.90E+05 |
| Cr-51 | 320.07 | N | 2.47E+00 | +- 2.98E+00 | 4.89E+00 | 2.33E+00 | 6.65E+02 |
| I-131 | 364.48 | N | 6.36E-01 | +- 7.44E+00 | 1.30E+01 | 6.16E+00 | 1.93E+02 |
| Sb-125 | 427.95 | N | 6.53E-02 | +- 3.26E-01 | 5.58E-01 | 2.64E-01 | 2.43E+04 |
| Be-7 | 477.56 | N | 1.88E+00 | +- 1.85E+00 | 2.99E+00 | 1.41E+00 | 1.28E+03 |
| Sb-124 | 602.71 | N | 6.17E-02 | +- 2.09E-01 | 3.56E-01 | 1.68E-01 | 1.44E+03 |
| Ru-106 | 621.84 | N | 1.78E-02 | +- 1.15E+00 | 2.01E+00 | 9.43E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 4.87E-02 | +- 1.94E-01 | 3.43E-01R | 1.64E-01 | 6.00E+03 |
| Nb-94 | 702.50 | N | 3.82E-02 | +- 1.17E-01 | 2.10E-01 | 9.86E-02 | 1.78E+08 |
| Nb-95 | 765.82 | N | 9.46E-02 | +- 3.33E-01 | 5.86E-01R | 2.81E-01 | 1.54E+03 |
| Co-58 | 810.75 | N | 8.59E-03 | +- 1.81E-01 | 3.20E-01 | 1.48E-01 | 1.70E+03 |
| Mn-54 | 834.81 | N | 7.19E-02 | +- 1.49E-01 | 2.51E-01 | 1.17E-01 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.45E-01 | +- 1.69E-01 | 3.24E-01 | 1.51E-01 | 2.01E+03 |
| Pa-234m | 1001.03 | N | 2.33E+01 | +- 1.98E+01 | 3.11E+01 | 1.41E+01 | 3.92E+13 |
| Eu-154 | 1004.80 | N | 3.69E-01 | +- 6.34E-01 | 1.20E+00 | 5.54E-01 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 6.12E-01 | +- 4.56E-01 | 9.24E-01 | 4.28E-01 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 4.62E-02 | +- 4.01E-01 | 6.90E-01R | 3.24E-01 | 5.85E+03 |
| Na-22 | 1274.54 | N | 5.33E-02 | +- 1.26E-01 | 2.18E-01 | 9.83E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 2.38E-02 | +- 1.13E-01 | 2.14E-01 | 9.60E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 3.77E-01 | +- 6.06E-01 | 1.02E+00 | 4.57E-01 | 1.17E+05 |
| Al-26 | 1808.65 | N | 2.33E-02 | +- 1.04E-01 | 1.91E-01 | 8.19E-02 | 6.31E+09 |

MEASURED TOTAL: 1.18E+02 +- 4.15E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.40 | 93.49 | 134 | 54 | 40 | 307 | 0.78 | Unknown |
| 2 | 52.96 | 106.59 | 31 | 31 | 24 | 155 | 0.38 | Unknown |
| 4 | 73.09 | 146.83 | 72 | 95 | 77 | 932 | 1.27 | Deleted |
| 5 | 74.82 | 150.29 | 964 | 90 | 54 | 583 | 0.87 | Unknown |
| 6 | 77.04 | 154.73 | 1527 | 102 | 54 | 583 | 0.82 | Unknown |
| 7 | 84.17 | 168.98 | 251 | 82 | 62 | 607 | 1.35 | Unknown |
| 8 | 87.22 | 175.07 | 541 | 76 | 50 | 455 | 1.05 | Unknown |
| 9 | 89.80 | 180.23 | 382 | 72 | 50 | 455 | 0.94 | Unknown |
| 11 | 94.93 | 190.48 | 74 | 41 | 30 | 228 | 0.42 | Unknown |

041061D08.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 12 | 99.26 | 199.13 | 87 | 64 | 50 | 431 | 1.22 | 1120DEsc |
| 14 | 108.47 | 217.55 | 57 | 37 | 28 | 194 | 0.42 | Unknown |
| 16 | 116.81 | 234.21 | 0 | 2842 | 2337 | 27036 | 72.33 | Deleted |
| 17 | 128.99 | 258.55 | 139 | 61 | 46 | 395 | 1.01 | Unknown |
| 19 | 196.12 | 392.74 | 16 | 31 | 25 | 154 | 0.48 | Deleted |
| 20 | 209.33 | 419.16 | 195 | 52 | 36 | 234 | 0.93 | Unknown |
| 22 | 241.66 | 483.79 | 421 | 67 | 44 | 300 | 1.30 | Unknown |
| 23 | 270.16 | 540.77 | 197 | 60 | 44 | 265 | 1.64 | Unknown |
| 27 | 328.17 | 656.74 | 74 | 34 | 24 | 118 | 0.87 | Unknown |
| 30 | 409.38 | 819.10 | 34 | 24 | 17 | 69 | 0.89 | Unknown |
| 31 | 462.98 | 926.27 | 139 | 34 | 21 | 79 | 1.24 | Unknown |
| 32 | 510.78 | 1021.84 | 189 | 44 | 28 | 106 | 1.55 | Unknown |
| 34 | 609.38 | 1218.95 | 781 | 60 | 19 | 63 | 1.34 | SPLIT |
| 37 | 768.11 | 1536.22 | 36 | 19 | 12 | 34 | 0.82 | Unknown |
| 38 | 769.48 | 1538.97 | 7 | 17 | 13 | 40 | 0.92 | Deleted |
| 42 | 933.78 | 1867.23 | 24 | 16 | 10 | 23 | 1.10 | Unknown |
| 43 | 964.87 | 1929.34 | 105 | 27 | 15 | 35 | 2.17 | Unknown |
| 47 | 1377.60 | 2752.88 | 23 | 18 | 13 | 29 | 1.90 | Unknown |
| 49 | 1730.65 | 3455.66 | 23 | 14 | 9 | 13 | 2.41 | Unknown |
| 50 | 1765.68 | 3525.28 | 114 | 23 | 6 | 6 | 2.42 | Unknown |
| 51 | 1849.03 | 3690.85 | 17 | 12 | 8 | 11 | 1.75 | Unknown |
| 53 | 609.38 | 1218.95 | 52 | 674 | 19 | 63 | 1.34 | 1120SEsc |

*****SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4*****

Paragon Analytics, Div. of DataChem Lab
GammaScan

*****Geo 13 / Solid*****

Sample ID: 0405096-31D GS040601-7

Code: 041075D03A

| | | | |
|---------------------------------|---------------------|---------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 13:18:30 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time. | 1.20E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.72E+002 g | Real Time | 1811 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041075D03.SPC |

Detector #: 3 (Detector 3)

Energy(keV) = -0.95 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.89 | 95.61 | 41 | 39 | 30 | 228 | 0.45 | a |
| 2 | 63.20 | 128.21 | 38 | 60 | 48 | 463 | 0.78 | a NET< CL |
| 3 | 74.68 | 151.15 | 524 | 81 | 55 | 557 | 0.98 | a |
| 4 | 77.02 | 155.82 | 878 | 89 | 55 | 557 | 1.02 | b |
| 5 | 84.00 | 169.78 | 121 | 80 | 63 | 633 | 1.30 | a |
| 6 | 87.16 | 176.10 | 355 | 79 | 57 | 554 | 1.17 | b |
| 7 | 89.80 | 181.37 | 254 | 69 | 51 | 475 | 0.99 | c |
| 8 | 92.77 | 187.30 | 323 | 78 | 57 | 554 | 1.15 | d |
| 9 | 105.38 | 212.50 | 63 | 65 | 52 | 455 | 1.11 | a |
| 10 | 108.70 | 219.15 | 23 | 35 | 28 | 195 | 0.49 | b NET< CL |
| 11 | 129.13 | 259.98 | 99 | 75 | 59 | 559 | 1.24 | a |
| 12 | 143.91 | 289.52 | 42 | 37 | 28 | 195 | 0.52 | a |
| 13 | 186.13 | 373.90 | 319 | 66 | 46 | 363 | 1.16 | a |
| 14 | 209.26 | 420.13 | 181 | 55 | 40 | 292 | 0.92 | a |
| 15 | 238.64 | 478.85 | 2088 | 104 | 41 | 284 | 1.17 | a HiResid |
| 16 | 241.48 | 484.52 | 431 | 73 | 50 | 365 | 1.51 | b HiResid |
| 17 | 270.18 | 541.89 | 140 | 55 | 41 | 293 | 1.48 | a |
| 18 | 277.24 | 555.99 | 71 | 56 | 44 | 313 | 1.67 | a |
| 19 | 295.26 | 592.02 | 657 | 67 | 36 | 226 | 1.40 | a |
| 20 | 300.19 | 601.86 | 122 | 46 | 33 | 201 | 1.27 | b |
| 21 | 328.01 | 657.46 | 108 | 40 | 28 | 167 | 1.02 | a |
| 22 | 338.30 | 678.03 | 421 | 58 | 34 | 201 | 1.43 | a |
| 23 | 351.84 | 705.10 | 998 | 73 | 31 | 173 | 1.34 | a |
| 24 | 409.35 | 820.03 | 40 | 31 | 24 | 118 | 1.04 | a |

041075D03.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 462.83 | 926.92 | 119 | 42 | 29 | 140 | 1.56 | a |
| 26 | 510.77 | 1022.74 | 220 | 47 | 30 | 135 | 1.90 | a |
| 27 | 583.18 | 1167.46 | 634 | 57 | 22 | 92 | 1.59 | a |
| 28 | 609.34 | 1219.73 | 697 | 60 | 24 | 107 | 1.66 | a |
| 29 | 661.89 | 1324.77 | 133 | 36 | 22 | 93 | 1.60 | a |
| 30 | 727.28 | 1455.46 | 153 | 34 | 19 | 67 | 1.62 | a |
| 31 | 768.49 | 1537.83 | 56 | 36 | 27 | 114 | 2.05 | a |
| 32 | 785.76 | 1572.34 | 29 | 25 | 19 | 65 | 1.68 | a |
| 33 | 795.32 | 1591.45 | 64 | 28 | 19 | 61 | 2.02 | a |
| 34 | 860.20 | 1721.12 | 65 | 28 | 19 | 66 | 2.06 | a |
| 35 | 911.36 | 1823.37 | 433 | 47 | 17 | 58 | 1.86 | a |
| 36 | 934.45 | 1869.53 | 29 | 18 | 12 | 31 | 1.30 | a |
| 37 | 965.10 | 1930.78 | 83 | 31 | 21 | 75 | 2.23 | a |
| 38 | 969.04 | 1938.65 | 230 | 37 | 17 | 59 | 1.83 | b |
| 39 | 1120.35 | 2241.05 | 131 | 31 | 18 | 55 | 2.10 | a |
| 40 | 1238.24 | 2476.68 | 55 | 25 | 17 | 51 | 2.08 | a |
| 41 | 1377.63 | 2755.26 | 20 | 19 | 14 | 36 | 1.75 | a |
| 42 | 1460.81 | 2921.51 | 381 | 43 | 16 | 39 | 2.57 | a |
| 43 | 1764.43 | 3528.33 | 112 | 26 | 12 | 23 | 2.71 | a |

041075D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.89 | 41 | 39 | 30 | 38 | 39 | 31 | |
| 2 | 63.20 | 38 | 60 | 48 | 32 | 60 | 48 | NET<CL |
| 3 | 74.68 | 524 | 81 | 55 | 520 | 81 | 55 | |
| 4 | 77.02 | 878 | 89 | 55 | 875 | 89 | 55 | |
| 5 | 84.00 | 121 | 80 | 63 | 119 | 80 | 63 | |
| 8 | 92.77 | 323 | 78 | 57 | 307 | 78 | 58 | |
| 12 | 143.91 | 42 | 37 | 28 | 41 | 37 | 28 | |
| 13 | 186.13 | 319 | 66 | 46 | 309 | 67 | 47 | |
| 15 | 238.64 | 2088 | 104 | 41 | 2082 | 104 | 41 | |
| 19 | 295.26 | 657 | 67 | 36 | 654 | 68 | 36 | |
| 22 | 338.30 | 421 | 58 | 34 | 419 | 58 | 34 | |
| 23 | 351.84 | 998 | 73 | 31 | 992 | 73 | 31 | |
| 26 | 510.77 | 220 | 47 | 30 | 171 | 48 | 33 | |
| 27 | 583.18 | 634 | 57 | 22 | 629 | 57 | 23 | |
| 28 | 609.34 | 697 | 60 | 24 | 694 | 60 | 24 | |
| 35 | 911.36 | 433 | 47 | 17 | 430 | 47 | 18 | |
| 42 | 1460.81 | 381 | 43 | 16 | 373 | 43 | 16 | |
| 43 | 1764.43 | 112 | 26 | 12 | 111 | 26 | 12 | |

041075D03.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-31D GS040601-7

Code: 041075D03A

| | | | |
|--------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 13:18:30 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time. | 1.20e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.72e+002 g | Real Time | 1811 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041075D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[3.80E-03*En^-3.74E+00 + 1.52E+02*En^7.83E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|-----------------------|--|----------|----------------|----------------|
| Th-234 | | 92.50 | | 1.16E+01 +- 2.96E+00 | | 4.45E+00 | 2.17E+00 | 3.92E+13 |
| Eu-155 | | 105.31 | | 5.34E-01 +- 5.46E-01 | | 8.93E-01 | 4.35E-01 | 4.35E+04 |
| U-235 | | 143.76 | | 5.79E-01 +- 5.24E-01 | | 8.47E-01 | 4.04E-01 | 6.17E+12 |
| | | 185.72 | | I.D. | | | | 6.17E+12 |
| Pb-212 | Average:x | 1.02E+01 | +- 5.07E-01 | | | | | 1.67E+04 |
| | | 238.63 | | 1.02E+01 +- 5.12E-01 | | 4.18E-01 | 2.02E-01 | 1.67E+04 |
| | | 300.09 | | 9.42E+00 +- 3.53E+00 | | 5.30E+00 | 2.55E+00 | 1.67E+04 |
| Tl-208 | Average:x | 2.98E+00 | +- 2.64E-01 | | | | | 1.27E+14 |
| | | 277.36 | | 2.55E+00 +- 2.00E+00 | | 3.23E+00 | 1.56E+00 | 1.27E+14 |
| | | 583.14 | | 2.99E+00 +- 2.73E-01 | | 2.30E-01 | 1.09E-01 | 1.27E+14 |
| | | 860.47 | | 2.87E+00 +- 1.25E+00 | | 1.81E+00 | 8.47E-01 | 1.27E+14 |
| Pb-214 | Average:x | 7.50E+00 | +- 4.52E-01 | | | | | 1.40E+07 |
| | | 295.22 | | 8.08E+00 +- 8.36E-01 | | 9.33E-01 | 4.50E-01 | 1.40E+07 |
| | | 351.99 | | 7.26E+00 +- 5.37E-01 | | 4.74E-01 | 2.27E-01 | 1.40E+07 |
| Ra-228 | Average:x | 9.53E+00 | +- 7.21E-01 | | | | | 5.04E+04 |
| | | 338.40 | | 9.96E+00 +- 1.39E+00 | | 1.69E+00 | 8.12E-01 | 5.04E+04 |
| | | 911.07 | | 9.66E+00 +- 1.05E+00 | | 8.53E-01 | 3.96E-01 | 5.04E+04 |
| | | 968.90 | | 8.86E+00 +- 1.42E+00 | | 1.45E+00 | 6.71E-01 | 5.04E+04 |
| Sb-125 | Average:x | 2.09E-01 | +- 3.75E-01 | | | | | 2.43E+04 |
| | | 463.51 | | 3.94E+00 +- 1.38E+00 | | 2.03E+00 | 9.68E-01 | 2.43E+04 |
| | | 427.95 | N-8.85E-02 | +- 3.89E-01 | | 6.78E-01 | 3.24E-01 | 2.43E+04 |
| Cs-137 | | 661.62 | | 6.96E-01 +- 1.87E-01 | | 2.49E-01 | 1.17E-01 | 2.64E+05 |
| Bi-212 | | 727.17 | | 1.17E+01 +- 2.58E+00 | | 3.11E+00 | 1.45E+00 | 1.67E+04 |
| Cs-134 | Average:x | 2.02E-01 | +- 1.06E-01 | | | | | 1.81E+04 |
| | | 795.76 | | 4.00E-01 +- 1.76E-01 | | 2.57E-01 | 1.20E-01 | 1.81E+04 |

041075D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Halflife Level | (hrs) |
|---------|-----------|---------|--------------|-------------|-----------------------|-----------|--------------|----------------|-------|
| Bi-214 | Average:x | 604.66 | N 8.87E-02 | +- 1.33E-01 | 2.21E-01B | 1.05E-01 | 1.81E+04 | | |
| | | 1120.28 | N 5.81E+00 | +- 1.28E+00 | | | 1.40E+07 | | |
| | | 609.32 | N 5.81E+00 | +- 3.18E+00 | 1.69E+00 | 7.83E-01 | 1.40E+07 | | |
| Co-56 | | 1238.28 | N 9.24E-01 | +- 4.25E-01 | 5.02E+00 | 2.50E+00 | 1.40E+07 | | |
| K-40 | | 1460.75 | N 2.80E+01 | +- 3.26E+00 | 6.14E-01 | 2.84E-01 | 1.86E+03 | | |
| Am-241 | | 59.54 | N 4.23E-01 | +- 1.13E+00 | 1.88E+00 | 9.17E-01 | 3.80E+06 | | |
| Co-57 | | 122.07 | N 4.21E-03 | +- 1.17E-01 | 1.98E-01 | 9.63E-02 | 6.48E+03 | | |
| Ce-144 | | 133.53 | N 7.29E-01 | +- 9.03E-01 | 1.49E+00b | 7.21E-01 | 6.82E+03 | | |
| Ce-139 | | 165.85 | N-6.43E-02 | +- 1.52E-01 | 2.61E-01 | 1.27E-01 | 3.30E+03 | | |
| Th-227 | | 236.00 | N 4.34E+00 | +- 2.36E+01 | 3.89E+01P | 1.94E+01 | 1.90E+05 | | |
| Cr-51 | | 320.07 | N-2.12E+00 | +- 3.62E+00 | 6.36E+00 | 3.06E+00 | 6.65E+02 | | |
| I-131 | | 364.48 | N 5.62E+00 | +- 8.60E+00 | 1.43E+01 | 6.80E+00 | 1.93E+02 | | |
| Be-7 | | 477.56 | N-3.91E-01 | +- 1.97E+00 | 3.45E+00 | 1.64E+00 | 1.28E+03 | | |
| Sb-124 | | 602.71 | N 2.46E-01 | +- 2.26E-01 | 3.64E-01B | 1.72E-01 | 1.44E+03 | | |
| Ru-106 | | 621.84 | N-1.51E+00 | +- 1.28E+00 | 2.41E+00 | 1.14E+00 | 8.84E+03 | | |
| Ag-110M | | 657.75 | N-1.03E-01 | +- 2.04E-01 | 3.68E-01R | 1.77E-01 | 6.00E+03 | | |
| Nb-94 | | 702.50 | N 1.09E-02 | +- 1.43E-01 | 2.47E-01 | 1.17E-01 | 1.78E+08 | | |
| Nb-95 | | 765.82 | N-2.36E-01 | +- 3.78E-01 | 6.79E-01R | 3.28E-01 | 1.54E+03 | | |
| Co-58 | | 810.75 | N-1.66E-01 | +- 1.87E-01 | 3.54E-01 | 1.65E-01 | 1.70E+03 | | |
| Mn-54 | | 834.81 | N 5.60E-02 | +- 1.53E-01 | 2.61E-01 | 1.22E-01 | 7.49E+03 | | |
| Sc-46 | | 889.26 | N 0.00E+00 | +- 1.77E-01 | 3.15E-01 | 1.46E-01 | 2.01E+03 | | |
| Pa-234m | | 1001.03 | N-4.22E+00 | +- 2.21E+01 | 3.98E+01 | 1.85E+01 | 3.92E+13 | | |
| Eu-154 | | 1004.80 | N 4.32E-02 | +- 7.01E-01 | 1.24E+00 | 5.73E-01 | 7.45E+04 | | |
| Fe-59 | | 1099.22 | N 1.32E-01 | +- 5.21E-01 | 9.04E-01 | 4.18E-01 | 1.08E+03 | | |
| Zn-65 | | 1115.52 | N-2.41E-01 | +- 5.24E-01 | 9.49E-01R | 4.54E-01 | 5.85E+03 | | |
| Na-22 | | 1274.54 | N-8.85E-02 | +- 1.67E-01 | 3.09E-01 | 1.44E-01 | 2.28E+04 | | |
| Co-60 | | 1332.51 | N 7.82E-03 | +- 1.49E-01 | 2.65E-01 | 1.22E-01 | 4.62E+04 | | |
| Eu-152 | | 1408.08 | N 1.35E-01 | +- 7.21E-01 | 1.27E+00 | 5.81E-01 | 1.17E+05 | | |
| Al-26 | | 1808.65 | N 5.87E-02 | +- 1.29E-01 | 2.23E-01 | 9.85E-02 | 6.31E+09 | | |

MEASURED TOTAL: 1.02E+02 +- 5.13E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|------------|---------------|-------------|------------|------------|---------|
| 1 | 46.89 | 95.61 | 38 | 39 | 31 | 228 | 0.45 | Unknown |
| 2 | 63.20 | 128.21 | 32 | 60 | 48 | 463 | 0.78 | Deleted |
| 3 | 74.68 | 151.15 | 520 | 81 | 55 | 557 | 0.98 | Unknown |
| 4 | 77.02 | 155.82 | 875 | 89 | 55 | 557 | 1.02 | Unknown |
| 5 | 84.00 | 169.78 | 119 | 80 | 63 | 633 | 1.30 | Unknown |
| 6 | 87.16 | 176.10 | 355 | 79 | 57 | 554 | 1.17 | Unknown |
| 7 | 89.80 | 181.37 | 254 | 69 | 51 | 475 | 0.99 | Unknown |
| 10 | 108.70 | 219.15 | 23 | 35 | 28 | 195 | 0.49 | Deleted |
| 11 | 129.13 | 259.98 | 99 | 75 | 59 | 559 | 1.24 | Unknown |
| 14 | 209.26 | 420.13 | 181 | 55 | 40 | 292 | 0.92 | Unknown |

041075D03.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 16 | 241.48 | 484.52 | 431 | 73 | 50 | 365 | 1.51 | Unknown |
| 17 | 270.18 | 541.89 | 140 | 55 | 41 | 293 | 1.48 | Unknown |
| 21 | 328.01 | 657.46 | 108 | 40 | 28 | 167 | 1.02 | Unknown |
| 24 | 409.35 | 820.03 | 40 | 31 | 24 | 118 | 1.04 | Unknown |
| 26 | 510.77 | 1022.74 | 171 | 48 | 33 | 135 | 1.90 | Unknown |
| 28 | 609.34 | 1219.73 | 694 | 60 | 24 | 107 | 1.66 | SPLIT |
| 31 | 768.49 | 1537.83 | 56 | 36 | 27 | 114 | 2.05 | Unknown |
| 32 | 785.76 | 1572.34 | 29 | 25 | 19 | 65 | 1.68 | Unknown |
| 36 | 934.45 | 1869.53 | 29 | 18 | 12 | 31 | 1.30 | Unknown |
| 37 | 965.10 | 1930.78 | 83 | 31 | 21 | 75 | 2.23 | Unknown |
| 41 | 1377.63 | 2755.26 | 20 | 19 | 14 | 36 | 1.75 | Unknown |
| 43 | 1764.43 | 3528.33 | 111 | 26 | 12 | 23 | 2.71 | Unknown |
| 45 | 609.34 | 1219.73 | 50 | 716 | 24 | 107 | 1.66 | 1120SEsc |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0405096-32 GS040601-7

Code: 041062D08A

 Sampling Start: 05/07/2004 12:00:00 | Counting Start: 06/26/2004 13:18:41
 Sampling Stop: 05/07/2004 12:00:00 | Decay Time. 1.20E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
 Sample Size 3.42E+002 g | Real Time 1852 Sec
 Collection Efficiency 1.0000 | Spc. File 041062D08.SPC

Detector #: 8 (Detector 8)

Energy(keV) = -0.38 + 0.500*Ch +-3.43E-07*Ch^2 + 1.39E-10*Ch^3 06/26/2004

FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003

Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000
 -----=====
 PEAK SEARCH RESULTS
 =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|--------------------|
| 1 | 46.44 | 93.57 | 3366 | 195 | 129 | 3686 | 0.73 | a |
| 2 | 49.99 | 100.67 | 232 | 160 | 129 | 3686 | 0.64 | b |
| 3 | 53.19 | 107.06 | 817 | 192 | 151 | 4608 | 0.74 | c |
| 4 | 57.82 | 116.31 | 503 | 209 | 168 | 5661 | 0.79 | a |
| 5 | 59.76 | 120.19 | 592 | 274 | 222 | 8382 | 1.19 | b |
| 6 | 60.93 | 122.52 | 471 | 187 | 150 | 4963 | 0.66 | c |
| 7 | 61.85 | 124.37 | 432 | 157 | 124 | 3805 | 0.56 | d |
| 8 | 63.26 | 127.18 | 4776 | 262 | 183 | 6759 | 0.90 | e |
| 9 | 67.55 | 135.75 | 654 | 242 | 194 | 7622 | 0.87 | f |
| 10 | 72.80 | 146.25 | 267 | 225 | 183 | 7421 | 0.57 | |
| 11 | 74.79 | 150.22 | 12231 | 352 | 225 | 10192 | 0.87 | |
| 12 | 77.10 | 154.85 | 21358 | 410 | 236 | 10292 | 0.85 | |
| 13 | 79.37 | 159.37 | 766 | 225 | 179 | 6467 | 0.79 | |
| 14 | 81.14 | 162.92 | -2858 | 274 | 242 | 10808 | 38.66 | NET< CL |
| 15 | 84.08 | 168.79 | 3674 | 288 | 215 | 7905 | 1.29 | |
| 16 | 87.20 | 175.03 | 376 | 367 | 300 | 15386 | 0.08 | |
| 17 | 89.94 | 180.50 | -6304 | 338 | 307 | 17463 | 13.17 | NET< CL |
| 18 | 92.82 | 186.25 | 8660 | 320 | 214 | 7788 | 1.34 | |
| 19 | 94.83 | 190.28 | 364 | 215 | 174 | 5599 | 0.83 | |
| 20 | 98.86 | 198.33 | 40 | 454 | 373 | 14727 | 0.07 | NET< CL Wide Pk |
| 21 | 98.66 | 197.93 | 1073 | 261 | 208 | 6861 | 1.61 | |
| 22 | 105.31 | 211.23 | 1260 | 229 | 179 | 5490 | 1.08 | a Wide Pk |
| 23 | 109.08 | 218.76 | 745 | 340 | 276 | 9412 | 1.93 | b |

041062D08.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|---------------------------------|
| 24 | 112.83 | 226.25 | 430 | 175 | 139 | 3922 | 0.86 | c |
| 25 | 115.14 | 230.87 | 485 | 175 | 139 | 3922 | 0.84 | d |
| 26 | 129.02 | 258.61 | 1494 | 186 | 140 | 3927 | 0.88 | a |
| 27 | 131.42 | 263.42 | 131 | 121 | 98 | 2356 | 0.44 | b |
| 28 | 143.88 | 288.32 | 817 | 178 | 139 | 3871 | 0.80 | a |
| 29 | 154.08 | 308.71 | 866 | 219 | 174 | 5150 | 1.22 | a |
| 30 | 163.38 | 327.29 | 145 | 114 | 92 | 2087 | 0.55 | a |
| 31 | 186.07 | 372.67 | 8486 | 255 | 145 | 3882 | 1.06 | a |
| 32 | 199.71 | 399.91 | 183 | 149 | 120 | 2923 | 0.80 | a |
| 33 | 205.27 | 411.05 | 203 | 146 | 118 | 2786 | 0.82 | a |
| 34 | 209.30 | 419.10 | 2096 | 170 | 118 | 2786 | 0.89 | b |
| 35 | 215.71 | 431.90 | 112 | 156 | 127 | 2990 | 1.01 | a NET< CL |
| 36 | 236.01 | 472.49 | 513 | 146 | 114 | 2403 | 0.94 | a HiResid |
| 37 | 238.67 | 477.81 | 23432 | 336 | 114 | 2403 | 1.00 | b HiResid |
| 38 | 241.78 | 484.02 | 7479 | 245 | 142 | 3204 | 1.35 | c HiResid |
| 39 | 252.49 | 505.43 | 156 | 81 | 63 | 985 | 0.54 | a |
| 40 | 256.20 | 512.86 | 276 | 130 | 103 | 1969 | 1.02 | b |
| 41 | 258.86 | 518.17 | 461 | 133 | 103 | 1969 | 1.03 | c |
| 42 | 270.24 | 540.93 | 2498 | 196 | 138 | 2831 | 1.49 | a |
| 43 | 274.38 | 549.20 | 210 | 156 | 126 | 2516 | 1.29 | b |
| 44 | 277.38 | 555.20 | 864 | 122 | 88 | 1573 | 0.82 | c |
| 45 | 295.26 | 590.94 | 12201 | 251 | 98 | 1791 | 1.00 | a |
| 46 | 300.16 | 600.74 | 1309 | 127 | 86 | 1493 | 0.84 | b |
| 47 | 324.05 | 648.50 | 71 | 73 | 59 | 850 | 0.57 | a |
| 48 | 328.07 | 656.53 | 993 | 133 | 96 | 1699 | 0.90 | b |
| 49 | 338.38 | 677.16 | 4744 | 174 | 87 | 1405 | 1.00 | a HiResid |
| 50 | 341.32 | 683.04 | 153 | 109 | 87 | 1405 | 0.94 | b HiResid |
| 51 | 352.01 | 704.40 | 20988 | 309 | 88 | 1537 | 1.12 | a HiResid |
| 52 | 389.07 | 778.49 | 113 | 97 | 78 | 1286 | 0.98 | a |
| 53 | 402.18 | 804.71 | 181 | 103 | 81 | 1308 | 1.17 | a |
| 54 | 405.72 | 811.78 | 141 | 112 | 90 | 1495 | 1.37 | b |
| 55 | 409.53 | 819.40 | 733 | 122 | 90 | 1495 | 1.24 | c |
| 56 | 452.98 | 906.28 | 79 | 62 | 49 | 581 | 0.67 | a |
| 57 | 454.68 | 909.67 | 99 | 90 | 72 | 1017 | 1.14 | b |
| 58 | 463.10 | 926.51 | 1423 | 118 | 74 | 1020 | 1.26 | a |
| 59 | 480.70 | 961.69 | 64 | 68 | 54 | 666 | 0.79 | a |
| 60 | 487.00 | 974.28 | 122 | 61 | 47 | 533 | 0.74 | b |
| 61 | 510.83 | 1021.93 | 2403 | 137 | 79 | 1089 | 1.50 | a HiResid |
| 62 | 534.12 | 1068.49 | 66 | 54 | 42 | 443 | 0.69 | a |
| 63 | 562.53 | 1125.29 | 239 | 80 | 61 | 733 | 1.19 | a |
| 64 | 581.57 | 1163.36 | 144 | 205 | 167 | 2431 | 4.27 | a NET< CL HiResid Wide Pk |
| 65 | 583.34 | 1166.89 | 7298 | 188 | 64 | 748 | 1.31 | b HiResid |
| 66 | 609.45 | 1219.09 | 15457 | 260 | 62 | 700 | 1.34 | a |
| 67 | 665.51 | 1331.16 | 455 | 87 | 63 | 765 | 1.52 | a |
| 68 | 703.16 | 1406.42 | 116 | 88 | 70 | 916 | 1.68 | a |
| 69 | 720.04 | 1440.16 | 178 | 91 | 71 | 851 | 2.01 | a |
| 70 | 727.36 | 1454.79 | 1526 | 105 | 57 | 638 | 1.44 | b |

041062D08.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 71 | 742.37 | 1484.78 | 140 | 99 | 79 | 970 | 2.31 | a |
| 72 | 755.39 | 1510.79 | 152 | 58 | 43 | 427 | 1.00 | a |
| 73 | 768.30 | 1536.60 | 1296 | 98 | 54 | 609 | 1.30 | a |
| 74 | 772.35 | 1544.70 | 263 | 74 | 54 | 609 | 1.36 | b |
| 75 | 782.18 | 1564.33 | 91 | 50 | 38 | 334 | 1.06 | a |
| 76 | 785.80 | 1571.58 | 642 | 88 | 59 | 613 | 1.78 | b |
| 77 | 794.98 | 1589.92 | 842 | 85 | 51 | 502 | 1.44 | a |
| 78 | 806.26 | 1612.45 | 336 | 66 | 45 | 416 | 1.28 | a |
| 79 | 831.35 | 1662.60 | 85 | 71 | 57 | 564 | 1.85 | a |
| 80 | 835.74 | 1671.38 | 356 | 74 | 53 | 513 | 1.57 | b |
| 81 | 839.56 | 1679.00 | 291 | 77 | 57 | 564 | 1.82 | c |
| 82 | 860.59 | 1721.03 | 834 | 82 | 48 | 442 | 1.48 | a |
| 83 | 873.28 | 1746.37 | 62 | 70 | 56 | 524 | 2.01 | a |
| 84 | 904.12 | 1807.99 | 132 | 73 | 57 | 541 | 1.91 | a |
| 85 | 911.16 | 1822.06 | 4955 | 153 | 49 | 451 | 1.61 | b |
| 86 | 934.10 | 1867.87 | 773 | 79 | 47 | 402 | 1.57 | a |
| 87 | 964.80 | 1929.20 | 905 | 83 | 47 | 405 | 1.60 | a |
| 88 | 968.96 | 1937.51 | 2890 | 122 | 47 | 405 | 1.59 | b |
| 89 | 1001.00 | 2001.48 | 251 | 56 | 38 | 310 | 1.41 | a |
| 90 | 1051.62 | 2102.56 | 55 | 53 | 42 | 338 | 1.75 | a |
| 91 | 1070.23 | 2139.72 | 57 | 54 | 42 | 347 | 1.75 | a |
| 92 | 1079.11 | 2157.45 | 70 | 38 | 28 | 189 | 0.99 | b |
| 93 | 1094.30 | 2187.78 | 69 | 49 | 38 | 285 | 1.69 | a |
| 94 | 1120.46 | 2240.00 | 3126 | 122 | 41 | 321 | 1.77 | a |
| 95 | 1133.97 | 2266.95 | 40 | 34 | 26 | 171 | 0.99 | a |
| 96 | 1155.18 | 2309.29 | 332 | 59 | 39 | 301 | 1.64 | a |
| 97 | 1208.11 | 2414.90 | 56 | 35 | 26 | 166 | 1.04 | a |
| 98 | 1238.35 | 2475.23 | 1197 | 84 | 39 | 289 | 1.82 | a |
| 99 | 1247.02 | 2492.51 | 47 | 36 | 28 | 180 | 1.22 | a |
| 100 | 1280.93 | 2560.15 | 224 | 55 | 38 | 272 | 1.80 | a |
| 101 | 1377.94 | 2753.57 | 818 | 71 | 35 | 239 | 1.80 | a |
| 102 | 1385.83 | 2769.28 | 119 | 45 | 33 | 218 | 1.62 | b |
| 103 | 1401.82 | 2801.16 | 234 | 55 | 38 | 268 | 1.91 | a |
| 104 | 1408.20 | 2813.88 | 451 | 63 | 38 | 268 | 1.92 | b |
| 105 | 1460.56 | 2918.19 | 293 | 62 | 43 | 299 | 2.44 | a |
| 106 | 1496.40 | 2989.57 | 79 | 41 | 30 | 204 | 1.25 | a |
| 107 | 1509.73 | 3016.12 | 342 | 57 | 36 | 249 | 1.80 | a |
| 108 | 1589.01 | 3173.93 | 261 | 48 | 29 | 190 | 1.31 | a |
| 109 | 1593.28 | 3182.44 | 204 | 58 | 42 | 309 | 2.06 | b |
| 110 | 1599.93 | 3195.68 | 30 | 37 | 29 | 190 | 1.28 | c |
| 111 | 1621.64 | 3238.88 | 181 | 43 | 28 | 149 | 1.74 | a |
| 112 | 1631.52 | 3258.53 | 194 | 45 | 30 | 162 | 2.04 | b |
| 113 | 1639.19 | 3273.77 | 37 | 29 | 22 | 108 | 1.27 | c |
| 114 | 1662.38 | 3319.90 | 161 | 42 | 28 | 140 | 2.08 | a |
| 115 | 1685.41 | 3365.70 | 59 | 33 | 24 | 109 | 1.96 | a |
| 116 | 1693.99 | 3382.78 | 42 | 36 | 27 | 127 | 2.24 | b |
| 117 | 1730.85 | 3456.06 | 523 | 54 | 24 | 99 | 2.13 | a |
| 118 | 1765.93 | 3525.77 | 2506 | 105 | 26 | 116 | 2.20 | a |
| 119 | 1849.27 | 3691.32 | 308 | 47 | 25 | 118 | 1.96 | a |

041062D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET080625.BKG (0418003-38 Weekly Background)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.44 | 3366 | 195 | 129 | 3348 | 195 | 129 | |
| 3 | 53.19 | 817 | 193 | 151 | 815 | 193 | 151 | |
| 7 | 61.85 | 432 | 157 | 124 | 418 | 157 | 124 | |
| 9 | 67.55 | 654 | 242 | 194 | 651 | 242 | 195 | |
| 11 | 74.79 | 12231 | 352 | 225 | 12225 | 352 | 225 | |
| 12 | 77.10 | 21358 | 410 | 236 | 21354 | 410 | 236 | |
| 15 | 84.08 | 3674 | 288 | 215 | 3669 | 289 | 215 | |
| 16 | 87.20 | 376 | 367 | 300 | 375 | 367 | 300 | |
| 18 | 92.82 | 8660 | 320 | 214 | 8636 | 320 | 214 | |
| 28 | 143.88 | 817 | 178 | 139 | 815 | 178 | 139 | |
| 31 | 186.07 | 8486 | 255 | 145 | 8475 | 255 | 145 | |
| 32 | 199.71 | 183 | 149 | 120 | 176 | 149 | 121 | |
| 33 | 205.27 | 203 | 146 | 118 | 202 | 146 | 118 | |
| 37 | 238.67 | 23432 | 336 | 114 | 23424 | 336 | 114 | |
| 42 | 270.24 | 2498 | 196 | 138 | 2498 | 196 | 138 | |
| 45 | 295.26 | 12201 | 251 | 98 | 12199 | 251 | 99 | |
| 49 | 338.38 | 4744 | 174 | 87 | 4741 | 174 | 87 | |
| 51 | 352.01 | 20988 | 309 | 88 | 20986 | 309 | 88 | |
| 61 | 510.83 | 2403 | 137 | 79 | 2351 | 138 | 80 | |
| 64 | 581.57 | 144 | 205 | 167 | 142 | 205 | 167 | NET<CL |
| 66 | 609.45 | 15457 | 260 | 62 | 15453 | 260 | 62 | |
| 85 | 911.16 | 4955 | 153 | 49 | 4953 | 153 | 49 | |
| 94 | 1120.46 | 3126 | 122 | 41 | 3125 | 122 | 41 | |
| 105 | 1460.56 | 293 | 62 | 43 | 285 | 62 | 43 | |

041062D08.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0405096-32 GS040601-7

Code: 041062D08A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 05/07/2004 12:00:00 | Counting Start: | 06/26/2004 13:18:41 |
| Sampling Stop: | 05/07/2004 12:00:00 | Decay Time. | 1.20e+003 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 3.42e+002 g | Real Time | 1852 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041062D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 8 (Detector 8)

Efficiency File: (D08) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-------------|-----------------------|----------|----------------|----------------|
| Am-241 | | 59.54 | | 3.13E+00 +- 1.45E+00 | 2.36E+00 | 1.17E+00 | 3.80E+06 |
| Th-234 | Average:x | 1.07E+02 | +- 5.54E+00 | | | | 3.92E+13 |
| | | 63.29 | | 1.93E+01 +- 7.22E+00 | 1.16E+01 | 5.73E+00 | 3.92E+13 |
| | | 92.50 | | 2.33E+02 +- 8.63E+00 | 1.16E+01 | 5.78E+00 | 3.92E+13 |
| Eu-155 | | 105.31 | | 9.03E+00 +- 1.64E+00 | 2.59E+00 | 1.29E+00 | 4.35E+04 |
| Pb-212 | Average:x | 1.25E+02 | +- 1.77E+00 | | | | 1.67E+04 |
| | | 115.18 | | 1.30E+02 +- 4.71E+01 | 7.57E+01 | 3.75E+01 | 1.67E+04 |
| | | 238.63 | | 1.26E+02 +- 1.80E+00 | 1.24E+00 | 6.12E-01 | 1.67E+04 |
| | | 300.09 | | 1.10E+02 +- 1.07E+01 | 1.47E+01 | 7.22E+00 | 1.67E+04 |
| U-235 | Average:x | 9.63E+00 | +- 2.05E+00 | | | | 6.17E+12 |
| | | 143.76 | | 1.21E+01 +- 2.64E+00 | 4.16E+00 | 2.06E+00 | 6.17E+12 |
| | | 163.35 | | 4.94E+00 +- 3.91E+00 | 6.38E+00 | 3.14E+00 | 6.17E+12 |
| | | 185.72 | I.D. | | | | 6.17E+12 |
| | | 205.31 | | 8.04E+00 +- 5.80E+00 | 9.46E+00 | 4.68E+00 | 6.17E+12 |
| Th-227 | | 236.00 | | 9.17E+00 +- 2.61E+00 | 4.13E+00 | 2.04E+00 | 1.90E+05 |
| Tl-208 | Average:x | 3.78E+01 | +- 9.26E-01 | | | | 1.27E+14 |
| | | 277.36 | | 3.37E+01 +- 4.78E+00 | 7.00E+00 | 3.45E+00 | 1.27E+14 |
| | | 583.14 | | 3.78E+01 +- 9.72E-01 | 6.73E-01 | 3.30E-01 | 1.27E+14 |
| | | 860.47 | | 4.01E+01 +- 3.93E+00 | 4.71E+00 | 2.29E+00 | 1.27E+14 |
| Pb-214 | Average:x | 1.66E+02 | +- 1.99E+00 | | | | 1.40E+07 |
| | | 295.22 | | 1.64E+02 +- 3.37E+00 | 2.68E+00 | 1.32E+00 | 1.40E+07 |
| | | 351.99 | | 1.67E+02 +- 2.45E+00 | 1.43E+00 | 7.02E-01 | 1.40E+07 |
| Ra-228 | Average:x | 1.22E+02 | +- 2.52E+00 | | | | 5.04E+04 |
| | | 338.40 | | 1.22E+02 +- 4.48E+00 | 4.57E+00 | 2.25E+00 | 5.04E+04 |
| | | 911.07 | | 1.22E+02 +- 3.77E+00 | 2.50E+00 | 1.22E+00 | 5.04E+04 |

041062D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|-----------|--------------|----------|-----------------------|-----------|----------|----------------|----------------|
| Cs-134 | | 968.90 | 1.22E+02 | ++ | 5.14E+00 | 4.07E+00 | 1.98E+00 | 5.04E+04 | |
| | Average:x | 1.88E+00 | ++ | 3.37E-01 | | . | . | . | 1.81E+04 |
| | | 563.26 | 1.28E+01 | ++ | 4.29E+00 | 6.66E+00 | 3.26E+00 | 1.81E+04 | |
| | | 604.66 | N-2.14E-01 | ++ | 4.16E-01 | 7.06E-01B | 3.46E-01 | 1.81E+04 | |
| | | 795.76 | 5.78E+00 | ++ | 5.82E-01 | 7.16E-01 | 3.49E-01 | 1.81E+04 | |
| Bi-214 | Average:x | 1.52E+02 | ++ | 2.35E+00 | | . | . | . | 1.40E+07 |
| | | 609.32 | 1.52E+02 | ++ | 2.55E+00 | 1.24E+00 | 6.07E-01 | 1.40E+07 | |
| | | 1120.28 | 1.53E+02 | ++ | 5.97E+00 | 4.12E+00 | 2.00E+00 | 1.40E+07 | |
| Nb-94 | | 702.50 | 5.99E-01 | ++ | 4.58E-01 | 7.44E-01 | 3.65E-01 | 1.78E+08 | |
| Bi-212 | | 727.17 | 1.27E+02 | ++ | 8.72E+00 | 9.78E+00 | 4.78E+00 | 1.67E+04 | |
| Mn-54 | | 834.81 | 2.32E+00 | ++ | 4.84E-01 | 7.04E-01 | 3.43E-01 | 7.49E+03 | |
| Eu-154 | Average:x | 6.03E-01 | ++ | 2.33E+00 | | . | . | . | 7.45E+04 |
| | | 873.20 | 3.11E+00 | ++ | 3.47E+00 | 5.70E+00 | 2.78E+00 | 7.45E+04 | |
| | | 1004.80 | N-1.44E+00 | ++ | 3.14E+00 | 5.38E+00r | 2.64E+00 | 7.45E+04 | |
| Pa-234m | | 1001.03 | 2.87E+02 | ++ | 6.43E+01 | 9.06E+01 | 4.37E+01 | 3.92E+13 | |
| Ru-106 | Average:x | -4.67E-01 | ++ | 4.15E+00 | | . | . | . | 8.84E+03 |
| | | 1050.47 | 2.45E+01 | ++ | 2.36E+01 | 3.85E+01 | 1.86E+01 | 8.84E+03 | |
| | | 621.84 | N-1.26E+00 | ++ | 4.22E+00 | 7.13E+00 | 3.49E+00 | 8.84E+03 | |
| Ag-110M | Average:x | 1.22E-01 | ++ | 4.34E-01 | | . | . | . | 6.00E+03 |
| | | 1384.27 | 4.93E+00 | ++ | 1.89E+00 | 2.85E+00 | 1.37E+00 | 6.00E+03 | |
| | | 657.75 | N-1.45E-01 | ++ | 4.46E-01 | 7.56E-01 | 3.70E-01 | 6.00E+03 | |
| K-40 | | 1460.75 | 2.37E+01 | ++ | 5.16E+00 | 7.35E+00 | 3.56E+00 | 1.12E+13 | |
| Co-57 | | 122.07 | N 1.61E-01 | ++ | 3.39E-01 | 5.60E-01 | 2.77E-01 | 6.48E+03 | |
| Ce-144 | | 133.53 | N-2.21E+00 | ++ | 2.70E+00 | 4.52E+00b | 2.24E+00 | 6.82E+03 | |
| Ce-139 | | 165.85 | N 2.57E-01 | ++ | 5.05E-01 | 8.34E-01b | 4.13E-01 | 3.30E+03 | |
| Cr-51 | | 320.07 | N-1.37E+00 | ++ | 1.19E+01 | 1.99E+01 | 9.82E+00 | 6.65E+02 | |
| I-131 | | 364.48 | N-1.10E+01 | ++ | 2.87E+01 | 4.83E+01 | 2.38E+01 | 1.93E+02 | |
| Sb-125 | | 427.95 | N 3.79E-01 | ++ | 1.26E+00 | 2.09E+00 | 1.03E+00 | 2.43E+04 | |
| Be-7 | | 477.56 | N 2.24E+00 | ++ | 6.32E+00 | 1.05E+01B | 5.15E+00 | 1.28E+03 | |
| Sb-124 | | 602.71 | N-3.60E-01 | ++ | 7.01E-01 | 1.19E+00 | 5.83E-01 | 1.44E+03 | |
| Cs-137 | | 661.62 | N 1.08E-01 | ++ | 6.73E-01 | 1.12E+00R | 5.50E-01 | 2.64E+05 | |
| Nb-95 | | 765.82 | N 1.37E+00 | ++ | 1.01E+00 | 1.59E+00R | 7.85E-01 | 1.54E+03 | |
| Co-58 | | 810.75 | N-2.15E-01 | ++ | 6.09E-01 | 1.04E+00b | 5.06E-01 | 1.70E+03 | |
| Sc-46 | | 889.26 | N 8.99E-02 | ++ | 6.41E-01 | 1.08E+00 | 5.25E-01 | 2.01E+03 | |
| Fe-59 | | 1099.22 | N-2.72E+00 | ++ | 2.05E+00 | 3.68E+00r | 1.80E+00 | 1.08E+03 | |
| Zn-65 | | 1115.52 | N-1.94E+00 | ++ | 1.26E+00 | 2.28E+00R | 1.12E+00 | 5.85E+03 | |
| Co-56 | | 1238.28 | N 3.05E+00 | ++ | 3.40E+00 | 5.53E+00r | 2.74E+00 | 1.86E+03 | |
| Na-22 | | 1274.54 | N 6.22E-02 | ++ | 4.23E-01 | 7.15E-01B | 3.46E-01 | 2.28E+04 | |
| Co-60 | | 1332.51 | N-1.29E-01 | ++ | 4.35E-01 | 7.47E-01 | 3.62E-01 | 4.62E+04 | |
| Eu-152 | | 1408.08 | N 1.27E+01 | ++ | 4.58E+00 | 6.83E+00r | 3.36E+00 | 1.17E+05 | |
| Al-26 | | 1808.65 | N 1.81E-01 | ++ | 3.87E-01 | 6.49E-01 | 3.10E-01 | 6.31E+09 | |

MEASURED TOTAL: 1.21E+03 +- 1.25E+02 pCi/g

041062D08.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 1 | 46.44 | 93.57 | 3348 | 195 | 129 | 3686 | 0.73 | Unknown |
| 2 | 49.99 | 100.67 | 232 | 160 | 129 | 3686 | 0.64 | Unknown |
| 3 | 53.19 | 107.06 | 815 | 193 | 151 | 4608 | 0.74 | Unknown |
| 4 | 57.82 | 116.31 | 503 | 209 | 168 | 5661 | 0.79 | Unknown |
| 6 | 60.93 | 122.52 | 471 | 187 | 150 | 4963 | 0.66 | Unknown |
| 8 | 63.26 | 127.18 | 4776 | 262 | 183 | 6759 | 0.90 | Unknown |
| 9 | 67.55 | 135.75 | 651 | 242 | 195 | 7622 | 0.87 | Unknown |
| 10 | 72.80 | 146.25 | 267 | 225 | 183 | 7421 | 0.57 | Unknown |
| 11 | 74.79 | 150.22 | 12225 | 352 | 225 | 10192 | 0.87 | Unknown |
| 12 | 77.10 | 154.85 | 21354 | 410 | 236 | 10292 | 0.85 | Unknown |
| 13 | 79.37 | 159.37 | 766 | 225 | 179 | 6467 | 0.79 | Unknown |
| 14 | 81.14 | 162.92 | -2858 | 274 | 242 | 10808 | 38.66 | Deleted |
| 15 | 84.08 | 168.79 | 3669 | 289 | 215 | 7905 | 1.29 | Unknown |
| 16 | 87.20 | 175.03 | 375 | 367 | 300 | 15386 | 0.08 | Unknown |
| 17 | 89.94 | 180.50 | -6304 | 338 | 307 | 17463 | 13.17 | Deleted |
| 19 | 94.83 | 190.28 | 364 | 215 | 174 | 5599 | 0.83 | Unknown |
| 20 | 98.66 | 197.93 | 1073 | 261 | 208 | 6861 | 1.61 | 1120DEsc |
| 21 | 98.86 | 198.33 | 40 | 454 | 373 | 14727 | 0.07 | Deleted |
| 23 | 109.08 | 218.76 | 745 | 340 | 276 | 9412 | 1.93 | Unknown |
| 24 | 112.83 | 226.25 | 430 | 175 | 139 | 3922 | 0.86 | Unknown |
| 26 | 129.02 | 258.61 | 1494 | 186 | 140 | 3927 | 0.88 | Unknown |
| 27 | 131.42 | 263.42 | 131 | 121 | 98 | 2356 | 0.44 | 1155DEsc |
| 29 | 154.08 | 308.71 | 866 | 219 | 174 | 5150 | 1.22 | Unknown |
| 32 | 199.71 | 399.91 | 176 | 149 | 121 | 2923 | 0.80 | Unknown |
| 34 | 209.30 | 419.10 | 2096 | 170 | 118 | 2786 | 0.89 | Unknown |
| 35 | 215.71 | 431.90 | 112 | 156 | 127 | 2990 | 1.01 | Deleted |
| 38 | 241.78 | 484.02 | 7479 | 245 | 142 | 3204 | 1.35 | Unknown |
| 39 | 252.49 | 505.43 | 156 | 81 | 63 | 985 | 0.54 | Unknown |
| 40 | 256.20 | 512.86 | 276 | 130 | 103 | 1969 | 1.02 | Unknown |
| 41 | 258.86 | 518.17 | 461 | 133 | 103 | 1969 | 1.03 | 1281DEsc |
| 42 | 270.24 | 540.93 | 2498 | 196 | 138 | 2831 | 1.49 | Unknown |
| 43 | 274.38 | 549.20 | 210 | 156 | 126 | 2516 | 1.29 | Unknown |
| 47 | 324.05 | 648.50 | 71 | 73 | 59 | 850 | 0.57 | Unknown |
| 48 | 328.07 | 656.53 | 993 | 133 | 96 | 1699 | 0.90 | Unknown |
| 50 | 341.32 | 683.04 | 153 | 109 | 87 | 1405 | 0.94 | Unknown |
| 52 | 389.07 | 778.49 | 113 | 97 | 78 | 1286 | 0.98 | Unknown |
| 53 | 402.18 | 804.71 | 181 | 103 | 81 | 1308 | 1.17 | Unknown |
| 54 | 405.72 | 811.78 | 141 | 112 | 90 | 1495 | 1.37 | Unknown |
| 55 | 409.53 | 819.40 | 733 | 122 | 90 | 1495 | 1.24 | Unknown |
| 56 | 452.98 | 906.28 | 79 | 62 | 49 | 581 | 0.67 | Unknown |
| 57 | 454.68 | 909.67 | 99 | 90 | 72 | 1017 | 1.14 | Unknown |
| 58 | 463.10 | 926.51 | 1423 | 118 | 74 | 1020 | 1.26 | Unknown |
| 59 | 480.70 | 961.69 | 65 | 68 | 54 | 666 | 0.79 | Unknown |
| 60 | 487.00 | 974.28 | 122 | 61 | 47 | 533 | 0.74 | 1510DEsc |
| 61 | 510.83 | 1021.93 | 2351 | 138 | 80 | 1089 | 1.50 | Unknown |
| 62 | 534.12 | 1068.49 | 66 | 54 | 42 | 443 | 0.69 | Unknown |
| 64 | 581.57 | 1163.36 | 142 | 205 | 167 | 2431 | 4.27 | Deleted |
| 67 | 665.51 | 1331.16 | 455 | 87 | 63 | 765 | 1.52 | Unknown |
| 69 | 720.04 | 1440.16 | 178 | 91 | 71 | 851 | 2.01 | Unknown |

041062D08.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 71 | 742.37 | 1484.78 | 140 | 99 | 79 | 970 | 2.31 | 1766DEsc |
| 72 | 755.39 | 1510.79 | 152 | 58 | 43 | 427 | 1.00 | Unknown |
| 73 | 768.30 | 1536.60 | 1296 | 98 | 54 | 609 | 1.30 | 1281SEsc |
| 74 | 772.35 | 1544.70 | 263 | 74 | 54 | 609 | 1.36 | Unknown |
| 75 | 782.18 | 1564.33 | 91 | 50 | 38 | 334 | 1.06 | Unknown |
| 76 | 785.80 | 1571.58 | 642 | 88 | 59 | 613 | 1.78 | Unknown |
| 78 | 806.26 | 1612.45 | 336 | 66 | 45 | 416 | 1.28 | Unknown |
| 79 | 831.35 | 1662.60 | 85 | 71 | 57 | 564 | 1.85 | Unknown |
| 81 | 839.56 | 1679.00 | 291 | 77 | 57 | 564 | 1.82 | Unknown |
| 84 | 904.12 | 1807.99 | 132 | 73 | 57 | 541 | 1.91 | Unknown |
| 86 | 934.10 | 1867.87 | 773 | 79 | 47 | 402 | 1.57 | Unknown |
| 87 | 964.80 | 1929.20 | 905 | 83 | 47 | 405 | 1.60 | Unknown |
| 91 | 1070.23 | 2139.72 | 57 | 54 | 42 | 347 | 1.75 | Unknown |
| 92 | 1079.11 | 2157.45 | 70 | 38 | 28 | 189 | 0.99 | 1589SEsc |
| 93 | 1094.30 | 2187.78 | 69 | 49 | 38 | 285 | 1.69 | Unknown |
| 95 | 1133.97 | 2266.95 | 40 | 34 | 26 | 171 | 0.99 | Unknown |
| 96 | 1155.18 | 2309.29 | 332 | 59 | 39 | 301 | 1.64 | Unknown |
| 97 | 1208.11 | 2414.90 | 56 | 35 | 26 | 166 | 1.04 | Unknown |
| 98 | 1238.35 | 2475.23 | 1197 | 84 | 39 | 289 | 1.82 | Unknown |
| 99 | 1247.02 | 2492.51 | 47 | 36 | 28 | 180 | 1.22 | Unknown |
| 100 | 1280.93 | 2560.15 | 224 | 55 | 38 | 272 | 1.80 | Unknown |
| 101 | 1377.94 | 2753.57 | 818 | 71 | 35 | 239 | 1.80 | Unknown |
| 103 | 1401.82 | 2801.16 | 234 | 55 | 38 | 268 | 1.91 | Unknown |
| 104 | 1408.20 | 2813.88 | 451 | 63 | 38 | 268 | 1.92 | Unknown |
| 106 | 1496.40 | 2989.57 | 79 | 41 | 30 | 204 | 1.25 | Unknown |
| 107 | 1509.73 | 3016.12 | 342 | 57 | 36 | 249 | 1.80 | Unknown |
| 108 | 1589.01 | 3173.93 | 261 | 48 | 29 | 190 | 1.31 | Unknown |
| 109 | 1593.28 | 3182.44 | 204 | 58 | 42 | 309 | 2.06 | Unknown |
| 110 | 1599.93 | 3195.68 | 30 | 37 | 29 | 190 | 1.28 | Unknown |
| 111 | 1621.64 | 3238.88 | 181 | 43 | 28 | 149 | 1.74 | Unknown |
| 112 | 1631.52 | 3258.53 | 194 | 45 | 30 | 162 | 2.04 | Unknown |
| 113 | 1639.19 | 3273.77 | 37 | 29 | 22 | 108 | 1.27 | Unknown |
| 114 | 1662.38 | 3319.90 | 161 | 42 | 28 | 140 | 2.08 | Unknown |
| 115 | 1685.41 | 3365.70 | 59 | 33 | 24 | 109 | 1.96 | Unknown |
| 116 | 1693.99 | 3382.78 | 42 | 36 | 27 | 127 | 2.24 | Unknown |
| 117 | 1730.85 | 3456.06 | 523 | 54 | 24 | 99 | 2.13 | Unknown |
| 118 | 1765.93 | 3525.77 | 2506 | 105 | 26 | 116 | 2.20 | Unknown |
| 119 | 1849.27 | 3691.32 | 308 | 47 | 25 | 118 | 1.96 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: GS040601-6MB GS040601-6

Code: 041086D10A

 Sampling Start: 07/01/2004 09:00:00 | Counting Start: 07/01/2004 09:03:53
 Sampling Stop: 07/01/2004 09:00:00 | Decay Time. 6.47E-002 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 60000 Sec
 Sample Size 1.00E+002 g | Real Time 60308 Sec
 Collection Efficiency 1.0000 | Spc. File 041086D10.SPC

 Detector #: 10 (Detector 10)
 Energy(keV) = -1.22 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
 FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
 Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
 PEAK SEARCH RESULTS
 =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 46.27 | 94.80 | 1038 | 167 | 127 | 2982 | 1.27 | a |
| 2 | 53.82 | 109.86 | 120 | 107 | 86 | 1700 | 0.90 | a |
| 3 | 63.24 | 128.67 | 1149 | 189 | 145 | 3293 | 1.74 | a HiResid Wide Pk |
| 4 | 66.28 | 134.74 | 929 | 151 | 114 | 2395 | 1.29 | b HiResid |
| 5 | 70.34 | 142.84 | 354 | 168 | 135 | 2994 | 1.63 | c HiResid |
| 6 | 74.75 | 151.65 | 1921 | 350 | 279 | 7185 | 3.86 | d HiResid |
| 7 | 77.17 | 156.48 | 1122 | 154 | 114 | 2395 | 1.37 | e HiResid |
| 8 | 84.48 | 171.07 | 538 | 244 | 197 | 4790 | 2.64 | f HiResid |
| 9 | 87.23 | 176.56 | 598 | 147 | 114 | 2395 | 1.34 | g HiResid |
| 10 | 92.58 | 187.24 | 1994 | 187 | 135 | 2994 | 1.58 | h HiResid |
| 11 | 98.19 | 198.44 | 84 | 83 | 66 | 1086 | 0.66 | a |
| 12 | 139.88 | 281.64 | 564 | 153 | 120 | 2498 | 1.45 | a |
| 13 | 143.67 | 289.20 | 217 | 136 | 110 | 2220 | 1.29 | b |
| 14 | 150.64 | 303.13 | 106 | 147 | 120 | 2498 | 1.54 | c NET< CL |
| 15 | 185.91 | 373.53 | 1422 | 162 | 118 | 2411 | 1.52 | a |
| 16 | 198.56 | 398.77 | 770 | 140 | 106 | 2072 | 1.28 | a |
| 17 | 238.80 | 479.10 | 875 | 139 | 103 | 2081 | 1.50 | a |
| 18 | 242.05 | 485.59 | 849 | 129 | 95 | 1850 | 1.38 | b |
| 19 | 295.35 | 591.98 | 1711 | 143 | 96 | 1802 | 1.50 | a |
| 20 | 338.71 | 678.53 | 147 | 95 | 75 | 1236 | 1.17 | a |
| 21 | 352.12 | 705.30 | 3238 | 168 | 101 | 1807 | 1.73 | a |
| 22 | 463.67 | 927.95 | 57 | 69 | 55 | 757 | 0.99 | a |
| 23 | 511.35 | 1023.14 | 5217 | 215 | 131 | 2387 | 3.32 | a Wide Pk |

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 24 | 558.91 | 1118.06 | 520 | 101 | 75 | 1120 | 1.63 | a |
| 25 | 570.34 | 1140.89 | 185 | 127 | 102 | 1775 | 2.31 | a |
| 26 | 583.83 | 1167.80 | 409 | 106 | 81 | 1261 | 1.81 | a |
| 27 | 598.50 | 1197.10 | 411 | 166 | 132 | 2510 | 3.12 | a Wide Pk |
| 28 | 603.02 | 1206.11 | 1161 | 317 | 254 | 5415 | 6.78 | b |
| 29 | 609.70 | 1219.45 | 2884 | 177 | 116 | 2113 | 2.60 | c |
| 30 | 652.08 | 1304.04 | 92 | 74 | 59 | 769 | 1.30 | a |
| 31 | 695.05 | 1389.80 | 269 | 177 | 143 | 2662 | 3.56 | a |
| 32 | 727.83 | 1455.25 | 95 | 122 | 99 | 1499 | 2.72 | a NET< CL |
| 33 | 768.75 | 1536.92 | 323 | 153 | 122 | 1790 | 4.10 | a Wide Pk |
| 34 | 803.81 | 1606.91 | 475 | 113 | 85 | 1155 | 2.68 | a |
| 35 | 838.46 | 1676.07 | 218 | 161 | 130 | 2095 | 3.90 | a |
| 36 | 899.10 | 1797.10 | 178 | 113 | 91 | 1175 | 3.03 | a |
| 37 | 911.69 | 1822.24 | 433 | 105 | 79 | 989 | 2.57 | b |
| 38 | 934.36 | 1867.49 | 99 | 73 | 58 | 647 | 1.80 | a |
| 39 | 963.26 | 1925.17 | 265 | 106 | 83 | 1013 | 2.97 | a |
| 40 | 969.67 | 1937.98 | 266 | 97 | 75 | 900 | 2.65 | b |
| 41 | 1001.52 | 2001.55 | 103 | 70 | 55 | 583 | 1.77 | a |
| 42 | 1062.48 | 2123.23 | 64 | 65 | 52 | 538 | 1.68 | a |
| 43 | 1064.67 | 2127.61 | 131 | 75 | 59 | 645 | 2.04 | b |
| 44 | 1120.46 | 2238.96 | 548 | 115 | 86 | 1003 | 3.40 | a |
| 45 | 1238.77 | 2475.11 | 230 | 96 | 75 | 811 | 3.14 | a |
| 46 | 1377.79 | 2752.60 | 56 | 117 | 95 | 955 | 4.88 | a NET< CL HiResid |
| 47 | 1461.33 | 2919.36 | 1793 | 121 | 71 | 618 | 3.98 | a |
| 48 | 1729.80 | 3455.26 | 133 | 59 | 45 | 316 | 2.58 | a |
| 49 | 1764.63 | 3524.77 | 648 | 102 | 72 | 553 | 4.89 | a |
| 50 | 1846.94 | 3689.07 | 95 | 65 | 51 | 341 | 3.54 | a |

041086D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET100625.BKG (0418003-40 Weekly Background)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.27 | 1038 | 167 | 127 | 22 | 330 | 271 | NET<CL |
| 2 | 53.82 | 120 | 107 | 86 | 19 | 211 | 173 | NET<CL |
| 3 | 63.24 | 1149 | 189 | 145 | 377 | 350 | 286 | |
| 4 | 66.28 | 929 | 151 | 114 | 280 | 328 | 268 | |
| 6 | 74.75 | 1921 | 350 | 279 | 923 | 556 | 455 | |
| 7 | 77.17 | 1122 | 154 | 114 | -28 | 319 | 263 | NET<CL |
| 8 | 84.48 | 538 | 244 | 197 | 257 | 372 | 305 | NET<CL |
| 9 | 87.23 | 598 | 147 | 114 | 137 | 279 | 228 | NET<CL |
| 10 | 92.58 | 1994 | 187 | 135 | 176 | 372 | 305 | NET<CL |
| 12 | 139.88 | 564 | 153 | 120 | 141 | 282 | 231 | NET<CL |
| 15 | 185.91 | 1422 | 162 | 118 | -71 | 356 | 293 | NET<CL |
| 16 | 198.56 | 770 | 140 | 106 | -33 | 312 | 257 | NET<CL |
| 17 | 238.80 | 875 | 139 | 103 | -73 | 308 | 254 | NET<CL |
| 18 | 242.05 | 849 | 129 | 95 | -32 | 286 | 235 | NET<CL |
| 19 | 295.35 | 1711 | 143 | 96 | -46 | 320 | 264 | NET<CL |
| 20 | 338.71 | 147 | 95 | 75 | 53 | 209 | 172 | NET<CL |
| 21 | 352.12 | 3238 | 168 | 101 | 83 | 363 | 298 | NET<CL |
| 23 | 511.35 | 5217 | 215 | 131 | 245 | 466 | 382 | NET<CL |
| 24 | 558.91 | 520 | 101 | 75 | -45 | 246 | 203 | NET<CL |
| 25 | 570.34 | 185 | 127 | 102 | -93 | 268 | 221 | NET<CL |
| 26 | 583.83 | 409 | 106 | 81 | 8 | 237 | 195 | NET<CL |
| 28 | 603.02 | 1161 | 317 | 254 | -821 | 680 | 562 | NET<CL |
| 29 | 609.70 | 2884 | 177 | 116 | -634 | 412 | 341 | NET<CL |
| 31 | 695.05 | 269 | 177 | 143 | 70 | 287 | 236 | NET<CL |
| 32 | 727.83 | 95 | 122 | 99 | -3 | 235 | 193 | NET<CL |
| 33 | 768.75 | 323 | 153 | 122 | 27 | 318 | 262 | NET<CL |
| 34 | 803.81 | 475 | 113 | 85 | -33 | 299 | 246 | NET<CL |
| 36 | 899.10 | 178 | 113 | 91 | 52 | 202 | 166 | NET<CL |
| 37 | 911.69 | 433 | 105 | 79 | 117 | 233 | 191 | NET<CL |
| 38 | 934.36 | 99 | 73 | 58 | -35 | 240 | 198 | NET<CL |
| 44 | 1120.46 | 548 | 115 | 86 | -213 | 293 | 242 | NET<CL |
| 45 | 1238.77 | 230 | 96 | 75 | -30 | 235 | 193 | NET<CL |
| 46 | 1377.79 | 56 | 117 | 95 | -55 | 169 | 140 | NET<CL |
| 47 | 1461.33 | 1793 | 121 | 71 | 326 | 266 | 217 | |
| 48 | 1729.80 | 133 | 59 | 45 | 21 | 185 | 152 | NET<CL |
| 49 | 1764.63 | 648 | 102 | 72 | -73 | 235 | 193 | NET<CL |
| 50 | 1846.94 | 95 | 65 | 51 | 13 | 153 | 126 | NET<CL |

041086D10.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: GS040601-6MB GS040601-6

Code: 041086D10A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 07/01/2004 09:00:00 | Counting Start: | 07/01/2004 09:03:53 |
| Sampling Stop: | 07/01/2004 09:00:00 | Decay Time. | 6.47e-002 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00e+002 g | Real Time | 60308 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041086D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh11).EFF (Geo 11 Eff Cal)

$$\text{Eff} = 10^{\text{A}} [-6.88\text{E}+00 + 5.45\text{E}+00 * \text{L} + -1.24\text{E}+00 * \text{L}^2 + 0.00\text{E}+00 * \text{L}^3] \quad 05/24/2004$$

$$\text{Eff.} = \text{EXP}[2.17\text{E}+00 + -8.06\text{E}-01 * \text{En} + -5.16\text{E}-04 * \text{En}^2] \quad \text{Above} \quad 180.00 \text{ keV}$$

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

| Nuclide | | N | ENERGY (keV) | E | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|------------|--------------|----------|-----------------------|-----------|----------|----------------|----------------|
| Th-234 | Average:x | 2.27E-01 | +- | 2.42E-01 | | | 3.92E+13 | | |
| | 63.29 | 5.34E-01 | +- | 4.96E-01 | 8.15E-01 | 4.05E-01 | 3.92E+13 | | |
| | 92.50 | N 1.31E-01 | +- | 2.77E-01 | 4.57E-01A | 2.28E-01 | 3.92E+13 | | |
| U-235 | 143.76 | 7.05E-02 | +- | 4.44E-02 | 7.22E-02 | 3.57E-02 | 6.17E+12 | | |
| Pb-212 | 238.63 | N-7.31E-03 | +- | 3.07E-02 | 5.09E-02 | 2.53E-02 | 1.67E+04 | | |
| Pb-214 | 351.99 | N 1.33E-02 | +- | 5.79E-02 | 9.55E-02 | 4.75E-02 | 1.40E+07 | | |
| Sb-125 | Average:x | 1.14E-02 | +- | 2.35E-02 | | | 2.43E+04 | | |
| | 463.51 | 4.00E-02 | +- | 4.87E-02 | 8.01E-02 | 3.91E-02 | 2.43E+04 | | |
| | 427.95 | N 2.77E-03 | +- | 2.68E-02 | 4.47E-02 | 2.20E-02 | 2.43E+04 | | |
| Tl-208 | 583.14 | N 8.75E-04 | +- | 2.50E-02 | 4.14E-02 | 2.06E-02 | 1.27E+14 | | |
| Sb-124 | 602.71 | N-7.68E-02 | +- | 6.36E-02 | 1.05E-01 | 5.25E-02 | 1.44E+03 | | |
| Bi-214 | 609.32 | N-1.27E-01 | +- | 8.26E-02 | 1.37E-01 | 6.84E-02 | 1.40E+07 | | |
| Ra-228 | Average:x | 1.70E-01 | +- | 6.73E-02 | | | 5.04E+04 | | |
| | 911.07 | N 5.81E-02 | +- | 1.16E-01 | 1.91E-01 | 9.46E-02 | 5.04E+04 | | |
| | 968.90 | 2.27E-01 | +- | 8.29E-02 | 1.31E-01 | 6.42E-02 | 5.04E+04 | | |
| Pa-234m | 1001.03 | 2.42E+00 | +- | 1.64E+00 | 2.64E+00 | 1.29E+00 | 3.92E+13 | | |
| Co-56 | 1238.28 | N-7.29E-03 | +- | 5.72E-02 | 9.49E-02 | 4.71E-02 | 1.86E+03 | | |
| K-40 | 1460.75 | 5.57E-01 | +- | 4.55E-01 | 7.47E-01 | 3.71E-01 | 1.12E+13 | | |
| Am-241 | 59.54 | N-4.43E-03 | +- | 3.41E-02 | 5.67E-02R | 2.81E-02 | 3.80E+06 | | |
| Eu-155 | 105.31 | N-1.17E-02 | +- | 2.41E-02 | 4.05E-02 | 2.00E-02 | 4.35E+04 | | |
| Co-57 | 122.07 | N 2.62E-03 | +- | 5.55E-03 | 9.19E-03 | 4.54E-03 | 6.48E+03 | | |
| Ce-144 | 133.53 | N-2.99E-02 | +- | 4.41E-02 | 7.41E-02 | 3.66E-02 | 6.82E+03 | | |
| Ce-139 | 165.85 | N-3.15E-03 | +- | 1.04E-02 | 1.73E-02 | 8.60E-03 | 3.30E+03 | | |
| Th-227 | 236.00 | N-7.65E-02 | +- | 6.95E-02 | 1.18E-01R | 5.84E-02 | 1.90E+05 | | |

041086D10.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) | |
|---------|-----------------|--------|--------------------------|----|----------|-------------------|-------------------|----------|
| Cr-51 | 320.07 | N | 1.22E-02 | +- | 6.66E-02 | 1.11E-01 | 5.46E-02 | 6.65E+02 |
| I-131 | 364.48 | N | 2.84E-04 | +- | 9.41E-03 | 1.57E-02 | 7.73E-03 | 1.93E+02 |
| Be-7 | 477.56 | N | 7.81E-02 | +- | 7.80E-02 | 1.33E-01 | 6.53E-02 | 1.28E+03 |
| Cs-134 | 604.66 | N | 3.88E-02 | +- | 2.02E-02 | 3.23E-02r | 1.60E-02 | 1.81E+04 |
| Ru-106 | 621.84 | N | 2.27E-02 | +- | 1.24E-01 | 2.07E-01 | 1.02E-01 | 8.84E+03 |
| Ag-110M | 657.75 | N | 1.20E-02 | +- | 1.14E-02 | 1.95E-02b | 9.59E-03 | 6.00E+03 |
| Cs-137 | 661.62 | N | 1.13E-02 | +- | 1.32E-02 | 2.16E-02 | 1.07E-02 | 2.64E+05 |
| Nb-94 | 702.50 | N | 7.98E-03 | +- | 2.11E-02 | 3.47E-02r | 1.72E-02 | 1.78E+08 |
| Bi-212 | 727.17 | N | 1.53E-01 | +- | 1.82E-01 | 2.99E-01 | 1.47E-01 | 1.67E+04 |
| Nb-95 | 765.82 | N | 5.14E-03 | +- | 1.75E-02 | 2.93E-02R | 1.45E-02 | 1.54E+03 |
| Co-58 | 810.75 | N | 5.46E-03 | +- | 1.87E-02 | 3.13E-02r | 1.55E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | 3.53E-02 | +- | 1.98E-02 | 3.43E-02R | 1.70E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.07E-02 | +- | 1.34E-02 | 2.28E-02B | 1.12E-02 | 2.01E+03 |
| Eu-154 | 1004.80 | N | 5.26E-02 | +- | 1.18E-01 | 1.99E-01r | 9.83E-02 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 1.79E-03 | +- | 2.82E-02 | 4.72E-02 | 2.32E-02 | 1.08E+03 |
| Zn-65 | 1115.52 | N | 4.10E-02 | +- | 4.95E-02 | 8.39E-02R | 4.15E-02 | 5.85E+03 |
| Na-22 | 1274.54 | N | 1.22E-02 | +- | 1.77E-02 | 3.00E-02 | 1.48E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | 1.05E-02 | +- | 1.77E-02 | 2.93E-02 | 1.44E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 5.28E-03 | +- | 9.15E-02 | 1.53E-01 | 7.52E-02 | 1.17E+05 |
| Al-26 | 1808.65 | N | 1.04E-02 | +- | 1.92E-02 | 3.26E-02 | 1.60E-02 | 6.31E+09 |

MEASURED TOTAL: 3.71E+00 +- 2.98E+00 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.27 | 94.80 | 22 | 330 | 271 | 2982 | 1.27 | Deleted |
| 2 | 53.82 | 109.86 | 19 | 211 | 173 | 1700 | 0.90 | Deleted |
| 4 | 66.28 | 134.74 | 280 | 328 | 268 | 2395 | 1.29 | Unknown |
| 5 | 70.34 | 142.84 | 354 | 168 | 135 | 2994 | 1.63 | Unknown |
| 6 | 74.75 | 151.65 | 923 | 556 | 455 | 7185 | 3.86 | Unknown |
| 7 | 77.17 | 156.48 | -28 | 319 | 263 | 2395 | 1.37 | Deleted |
| 8 | 84.48 | 171.07 | 257 | 372 | 305 | 4790 | 2.64 | Deleted |
| 9 | 87.23 | 176.56 | 137 | 279 | 228 | 2395 | 1.34 | Deleted |
| 11 | 98.19 | 198.44 | 84 | 83 | 66 | 1086 | 0.66 | Unknown |
| 12 | 139.88 | 281.64 | 141 | 282 | 231 | 2498 | 1.45 | Deleted |
| 14 | 150.64 | 303.13 | 106 | 147 | 120 | 2498 | 1.54 | Deleted |
| 15 | 185.91 | 373.53 | -71 | 356 | 293 | 2411 | 1.52 | Deleted |
| 16 | 198.56 | 398.77 | -33 | 312 | 257 | 2072 | 1.28 | Deleted |
| 18 | 242.05 | 485.59 | -32 | 286 | 235 | 1850 | 1.38 | Deleted |
| 19 | 295.35 | 591.98 | -46 | 320 | 264 | 1802 | 1.50 | Deleted |
| 20 | 338.71 | 678.53 | 53 | 209 | 172 | 1236 | 1.17 | Deleted |
| 23 | 511.35 | 1023.14 | 245 | 466 | 382 | 2387 | 3.32 | Deleted |
| 24 | 558.91 | 1118.06 | -45 | 246 | 203 | 1120 | 1.63 | Deleted |
| 25 | 570.34 | 1140.89 | -93 | 268 | 221 | 1775 | 2.31 | Deleted |
| 27 | 598.50 | 1197.10 | 411 | 166 | 132 | 2510 | 3.12 | Unknown |

041086D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 30 | 652.08 | 1304.04 | 92 | 74 | 59 | 769 | 1.30 | Unknown |
| 31 | 695.05 | 1389.80 | 70 | 287 | 236 | 2662 | 3.56 | Deleted |
| 32 | 727.83 | 1455.25 | -3 | 235 | 193 | 1499 | 2.72 | Deleted |
| 33 | 768.75 | 1536.92 | 27 | 318 | 262 | 1790 | 4.10 | Deleted |
| 34 | 803.81 | 1606.91 | -33 | 299 | 246 | 1155 | 2.68 | Deleted |
| 35 | 838.46 | 1676.07 | 218 | 161 | 130 | 2095 | 3.90 | Unknown |
| 36 | 899.10 | 1797.10 | 52 | 202 | 166 | 1175 | 3.03 | Deleted |
| 38 | 934.36 | 1867.49 | -35 | 240 | 198 | 647 | 1.80 | Deleted |
| 39 | 963.26 | 1925.17 | 265 | 106 | 83 | 1013 | 2.97 | Unknown |
| 42 | 1062.48 | 2123.23 | 64 | 65 | 52 | 538 | 1.68 | Unknown |
| 43 | 1064.67 | 2127.61 | 131 | 75 | 59 | 645 | 2.04 | Unknown |
| 44 | 1120.46 | 2238.96 | -213 | 293 | 242 | 1003 | 3.40 | Deleted |
| 46 | 1377.79 | 2752.60 | -55 | 169 | 140 | 955 | 4.88 | Deleted |
| 48 | 1729.80 | 3455.26 | 21 | 185 | 152 | 316 | 2.58 | Deleted |
| 49 | 1764.63 | 3524.77 | -73 | 235 | 193 | 553 | 4.89 | Deleted |
| 50 | 1846.94 | 3689.07 | 13 | 153 | 126 | 341 | 3.54 | Deleted |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: GS040720-2MB GS040720-2

Code: 041258D08A

Sampling Start: 07/21/2004 07:00:00 | Counting Start: 07/21/2004 07:39:45
Sampling Stop: 07/21/2004 07:00:00 | Decay Time. 6.62E-001 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 7200 Sec
Sample Size 5.00E+002 g | Real Time 7230 Sec
Collection Efficiency 1.0000 | Spc. File 041258D08.SPC

Detector #: 8 (Detector 8)
Energy(keV) = -0.30 + 0.500*Ch +-1.89E-07*Ch^2 + 9.91E-11*Ch^3 07/21/2004
FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 1 | 46.48 | 93.50 | 40 | 23 | 16 | 58 | 0.62 | a |
| 2 | 63.21 | 126.93 | 49 | 31 | 23 | 103 | 0.87 | a |
| 3 | 92.71 | 185.90 | 95 | 31 | 20 | 83 | 0.84 | a |
| 4 | 139.41 | 279.24 | 26 | 27 | 21 | 81 | 0.95 | a |
| 5 | 185.59 | 371.54 | 29 | 23 | 16 | 59 | 0.58 | a |
| 6 | 198.38 | 397.09 | 31 | 26 | 19 | 73 | 0.87 | a |
| 7 | 238.43 | 477.17 | 26 | 21 | 15 | 49 | 0.71 | a |
| 8 | 351.92 | 704.02 | 32 | 21 | 15 | 47 | 0.93 | a |
| 9 | 510.78 | 1021.54 | 165 | 37 | 22 | 74 | 1.87 | a |
| 10 | 558.37 | 1116.66 | 23 | 17 | 12 | 31 | 0.80 | a |
| 11 | 609.49 | 1218.84 | 36 | 24 | 17 | 53 | 1.43 | a |
| 12 | 1460.92 | 2918.45 | 21 | 13 | 7 | 10 | 1.75 | a |

041258D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET080716.BKG (0419002-28 Weekly Bkg.)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 46.48 | 40 | 23 | 16 | -20 | 31 | 26 | NET<CL |
| 2 | 63.21 | 49 | 31 | 23 | -30 | 37 | 32 | NET<CL |
| 3 | 92.71 | 95 | 31 | 20 | 5 | 38 | 31 | NET<CL |
| 4 | 139.41 | 26 | 27 | 21 | 9 | 32 | 26 | NET<CL |
| 5 | 185.59 | 29 | 23 | 16 | -11 | 29 | 25 | NET<CL |
| 6 | 198.38 | 32 | 26 | 19 | 9 | 30 | 24 | NET<CL |
| 7 | 238.43 | 26 | 21 | 15 | -9 | 28 | 23 | NET<CL |
| 8 | 351.92 | 32 | 21 | 15 | 7 | 26 | 21 | NET<CL |
| 9 | 510.78 | 165 | 37 | 22 | -25 | 48 | 40 | NET<CL |
| 10 | 558.37 | 23 | 17 | 12 | 3 | 21 | 17 | NET<CL |
| 11 | 609.49 | 36 | 24 | 17 | 23 | 27 | 21 | |
| 12 | 1460.92 | 21 | 13 | 7 | -1 | 16 | 13 | NET<CL |

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: GS040720-2MB GS040720-2

Code: 041258D08A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 07/21/2004 07:00:00 | Counting Start: | 07/21/2004 07:39:45 |
| Sampling Stop: | 07/21/2004 07:00:00 | Decay Time | 6.62e-001 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 7200 Sec |
| Sample Size | 5.00e+002 g | Real Time | 7230 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041258D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

 Detector #: 8 (Detector 8)

Efficiency File: (D08) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

 Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)=====
 MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|---------|--------------|----------|-----------------------|-----------|----------|----------------|----------------|
| Th-234 | 92.50 | N | 2.24E-02 | +- 1.75E-01 | 2.98E-01 | 1.43E-01 | 3.92E+13 | |
| Pb-212 | 238.63 | N | 7.71E-03 | +- 2.40E-02 | 4.28E-02 | 2.02E-02 | 1.67E+04 | |
| Pb-214 | 351.99 | N | 9.42E-03 | +- 3.47E-02 | 5.98E-02 | 2.80E-02 | 1.40E+07 | |
| Bi-214 | 609.32 | N | 3.91E-02 | +- 4.52E-02 | 7.40E-02 | 3.47E-02 | 1.40E+07 | |
| K-40 | 1460.75 | N | 1.76E-02 | +- 2.22E-01 | 4.08E-01 | 1.85E-01 | 1.12E+13 | |
| Am-241 | 59.54 | N | 1.45E-02 | +- 2.14E-02 | 3.96E-02B | 1.86E-02 | 3.80E+06 | |
| Eu-155 | 105.31 | N | 3.76E-03 | +- 3.15E-02 | 5.46E-02 | 2.57E-02 | 4.35E+04 | |
| Co-57 | 122.07 | N | 4.33E-03 | +- 6.85E-03 | 1.14E-02 | 5.31E-03 | 6.48E+03 | |
| Ce-144 | 133.53 | N | 9.72E-03 | +- 5.81E-02 | 1.03E-01 | 4.84E-02 | 6.82E+03 | |
| U-235 | 143.76 | N | 1.63E-02 | +- 6.95E-02 | 1.23E-01 | 5.81E-02 | 6.17E+12 | |
| Ce-139 | 165.85 | N | 8.18E-03 | +- 9.64E-03 | 1.58E-02 | 7.39E-03 | 3.30E+03 | |
| Th-227 | 236.00 | N | 9.13E-03 | +- 7.33E-02 | 1.30E-01B | 6.09E-02 | 1.90E+05 | |
| Pa-231 | 302.67 | N | 4.55E-02 | +- 4.61E-01 | 8.17E-01 | 3.82E-01 | 7.87E+05 | |
| Cr-51 | 320.07 | N | 3.13E-02 | +- 1.08E-01 | 1.86E-01 | 8.67E-02 | 6.65E+02 | |
| I-131 | 364.48 | N | 1.19E-03 | +- 1.22E-02 | 2.20E-02 | 1.01E-02 | 1.93E+02 | |
| Sb-125 | 427.95 | N | 1.95E-03 | +- 3.43E-02 | 6.13E-02 | 2.80E-02 | 2.43E+04 | |
| Be-7 | 477.56 | N | 7.29E-02 | +- 1.15E-01 | 2.18E-01 | 1.01E-01 | 1.28E+03 | |
| Tl-208 | 583.14 | N | 2.86E-03 | +- 2.18E-02 | 3.79E-02 | 1.77E-02 | 1.27E+14 | |
| Sb-124 | 602.71 | N | 1.76E-03 | +- 1.83E-02 | 3.24E-02 | 1.52E-02 | 1.44E+03 | |
| Cs-134 | 604.66 | N | 1.77E-03 | +- 1.84E-02 | 3.27E-02B | 1.53E-02 | 1.81E+04 | |
| Ru-106 | 621.84 | N | 2.71E-02 | +- 1.60E-01 | 2.89E-01 | 1.34E-01 | 8.84E+03 | |
| Ag-110M | 657.75 | N | 2.36E-03 | +- 1.47E-02 | 2.71E-02 | 1.24E-02 | 6.00E+03 | |
| Cs-137 | 661.62 | N | 4.66E-03 | +- 1.59E-02 | 2.97E-02 | 1.35E-02 | 2.64E+05 | |
| Nb-94 | 702.50 | N | 8.86E-04 | +- 1.93E-02 | 3.43E-02 | 1.60E-02 | 1.78E+08 | |
| Bi-212 | 727.17 | N | 0.00E+00 | +- 2.48E-01 | 4.45E-01 | 2.04E-01 | 1.67E+04 | |

041258D08.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | | Critical MDA | Halflife Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-------------|-----------------|-------------------|-------------------|
| Nb-95 | 765.82 | N | 0.00E+00 | +- 1.60E-02 | 2.88E-02 | 1.32E-02 | 1.54E+03 |
| Co-58 | 810.75 | N | -4.89E-03 | +- 1.53E-02 | 2.88E-02 | 1.31E-02 | 1.70E+03 |
| Mn-54 | 834.81 | N | -3.98E-03 | +- 1.52E-02 | 2.85E-02 | 1.29E-02 | 7.49E+03 |
| Sc-46 | 889.26 | N | 1.47E-03 | +- 1.64E-02 | 2.96E-02 | 1.34E-02 | 2.01E+03 |
| Ra-228 | 911.07 | N | -6.59E-03 | +- 8.09E-02 | 1.45E-01 | 6.71E-02 | 5.04E+04 |
| Pa-234m | 1001.03 | N | -2.36E+00 | +- 2.74E+00 | 5.56E+00 | 2.52E+00 | 3.92E+13 |
| Eu-154 | 1004.80 | N | -9.62E-03 | +- 9.17E-02 | 1.70E-01 | 7.66E-02 | 7.45E+04 |
| Fe-59 | 1099.22 | N | -2.20E-03 | +- 3.26E-02 | 6.01E-02 | 2.71E-02 | 1.08E+03 |
| Zn-65 | 1115.52 | N | -2.48E-03 | +- 3.54E-02 | 6.56E-02 | 2.94E-02 | 5.85E+03 |
| Co-56 | 1238.28 | N | 1.52E-02 | +- 2.80E-02 | 4.78E-02 | 2.12E-02 | 1.86E+03 |
| Na-22 | 1274.54 | N | 2.05E-02 | +- 1.99E-02 | 3.14E-02 | 1.38E-02 | 2.28E+04 |
| Co-60 | 1332.51 | N | -2.17E-03 | +- 1.81E-02 | 3.43E-02 | 1.52E-02 | 4.62E+04 |
| Eu-152 | 1408.08 | N | -1.32E-02 | +- 9.24E-02 | 1.75E-01 | 7.77E-02 | 1.17E+05 |
| Al-26 | 1808.65 | N | 9.89E-03 | +- 1.69E-02 | 2.91E-02 | 1.20E-02 | 6.31E+09 |

MEASURED TOTAL: 1.70E-01 +- 5.48E-01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 46.48 | 93.50 | -20 | 31 | 26 | 58 | 0.62 | Deleted |
| 2 | 63.21 | 126.93 | -30 | 37 | 32 | 103 | 0.87 | Deleted |
| 4 | 139.41 | 279.24 | 9 | 32 | 26 | 81 | 0.95 | Deleted |
| 5 | 185.59 | 371.54 | -11 | 29 | 25 | 59 | 0.58 | Deleted |
| 6 | 198.38 | 397.09 | 9 | 30 | 24 | 73 | 0.87 | Deleted |
| 9 | 510.78 | 1021.54 | -25 | 48 | 40 | 74 | 1.87 | Deleted |
| 10 | 558.37 | 1116.66 | 3 | 21 | 17 | 31 | 0.80 | Deleted |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: GS040601-6LCS GS040601-6

Code: 041054D07A

Sampling Start: 07/01/2004 09:00:00 | Counting Start: 07/01/2004 09:03:37
Sampling Stop: 07/01/2004 09:00:00 | Decay Time. 6.03E-002 Hrs
Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
Sample Size 1.00E+002 g | Real Time 1873 Sec
Collection Efficiency 1.0000 | Spc. File 041054D07.SPC

Detector #: 7 (Detector 7)
Energy(keV) = -2.03 + 0.500*Ch + 5.21E-07*Ch^2 +-8.19E-11*Ch^3 07/01/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA | UN- COUNTS | C.L. CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------|---------------|-------------------|----------------|---------------|---------------|--------------------|
| 1 | 49.58 | 103.17 | 6568 | 493 | 383 | 21656 | 1.55 | a | HiResid Wide Pk |
| 2 | 50.44 | 104.90 | 54 | 216 | 177 | 7715 | 0.42 | b | NET< CL HiResid |
| 3 | 59.50 | 123.00 | 153651 | 831 | 228 | 10435 | 0.84 | a | |
| 4 | 65.57 | 135.13 | 155 | 156 | 127 | 3229 | 0.84 | a | |
| 5 | 66.77 | 137.53 | 210 | 118 | 94 | 2175 | 0.43 | b | |
| 6 | 88.00 | 179.96 | 43708 | 441 | 116 | 2728 | 0.88 | a | |
| 7 | 102.97 | 209.88 | 102 | 111 | 90 | 1615 | 0.82 | a | |
| 8 | 121.97 | 247.84 | 7303 | 209 | 99 | 1819 | 0.93 | a | |
| 9 | 130.57 | 265.04 | 79 | 118 | 96 | 1709 | 0.95 | a | NET< CL |
| 10 | 136.34 | 276.56 | 838 | 129 | 95 | 1663 | 0.97 | a | |
| 11 | 165.85 | 335.52 | 479 | 121 | 93 | 1601 | 0.93 | a | |
| 12 | 185.56 | 374.89 | 101 | 107 | 86 | 1497 | 0.85 | a | |
| 13 | 254.37 | 512.36 | 62 | 72 | 58 | 834 | 0.52 | a | |
| 14 | 267.83 | 539.24 | 46 | 71 | 57 | 806 | 0.52 | a | NET< CL |
| 15 | 310.57 | 624.60 | 107 | 109 | 88 | 1421 | 0.98 | a | |
| 16 | 510.91 | 1024.57 | 65 | 64 | 51 | 642 | 0.63 | a | |
| 17 | 661.62 | 1325.33 | 30940 | 364 | 75 | 986 | 1.43 | a | |
| 18 | 1148.54 | 2296.71 | 45 | 58 | 46 | 463 | 1.15 | a | NET< CL |
| 19 | 1173.20 | 2345.92 | 25366 | 326 | 57 | 570 | 1.85 | a | |
| 20 | 1332.34 | 2663.38 | 22276 | 300 | 27 | 136 | 1.99 | a | |
| 21 | 1835.45 | 3667.56 | 28 | 19 | 13 | 35 | 1.53 | a | |

041054D07.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 4 | 65.57 | 155 | 156 | 127 | 151 | 156 | 127 | |
| 9 | 130.57 | 79 | 118 | 96 | 78 | 118 | 96 | NET<CL |
| 12 | 185.56 | 101 | 107 | 86 | 93 | 107 | 86 | |
| 13 | 254.37 | 62 | 72 | 58 | 61 | 72 | 58 | |
| 16 | 510.91 | 65 | 64 | 51 | 30 | 64 | 52 | NET<CL |

041054D07.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: GS040601-6LCS GS040601-6

Code: 041054D07A

Sampling Start: 07/01/2004 09:00:00 | Counting Start: 07/01/2004 09:03:37
Sampling Stop: 07/01/2004 09:00:00 | Decay Time. 6.03e-002 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 1.00e+002 g | Real Time 1873 Sec
Collection Efficiency 1.0000 | Spectrum File 041054D07.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 7 (Detector 7)
Efficiency File: (D07) (Sh11).EFF (Geo 11 Eff Cal)
Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: ANALYTICAL.LIB (Analytical)

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|----------|--------------------------|-----------|-------------------|-------------------|
| Am-241 | 59.54 | 1.03E+03 | +- 5.57E+00 | 3.07E+00 | 1.52E+00 | 3.79E+06 |
| Cd-109 | 88.02 | 2.67E+03 | +- 2.70E+01 | 1.44E+01 | 7.12E+00 | 1.11E+04 |
| Co-57 | 122.07 | 2.06E+01 | +- 5.91E-01 | 5.68E-01 | 2.80E-01 | 6.50E+03 |
| Ce-139 | 165.85 | 1.73E+00 | +- 4.37E-01 | 6.81E-01 | 3.36E-01 | 3.30E+03 |
| Cs-137 | 661.62 | 3.56E+02 | +- 4.18E+00 | 1.76E+00 | 8.66E-01 | 2.64E+05 |
| Co-60 | Average:x | 4.28E+02 | +- 3.99E+00 | | | 4.62E+04 |
| | 1173.21 | 4.30E+02 | +- 5.53E+00 | 1.98E+00 | 9.65E-01 | 4.62E+04 |
| | 1332.48 | 4.27E+02 | +- 5.75E+00 | 1.09E+00 | 5.20E-01 | 4.62E+04 |
| Y-88 | 1836.01 | 7.30E-01 | +- 4.91E-01 | 7.41E-01 | 3.35E-01 | 2.56E+03 |
| Hg-203 | 279.18 | MDA | | 1.00E+00 | 4.95E-01 | 1.12E+03 |
| Sn-113 | 391.68 | MDA | | 1.74E+00 | 8.57E-01 | 2.76E+03 |
| Y-88 | 898.02 | MDA | | 2.59E+00 | 1.28E+00 | 2.56E+03 |

MEASURED TOTAL: 4.51E+03 +- 4.23E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 49.58 | 103.17 | 6568 | 493 | 383 | 21656 | 1.55 | Unknown |
| 2 | 50.44 | 104.90 | 54 | 216 | 177 | 7715 | 0.42 | Deleted |
| 4 | 65.57 | 135.13 | 151 | 156 | 127 | 3229 | 0.84 | Unknown |
| 5 | 66.77 | 137.53 | 210 | 118 | 94 | 2175 | 0.43 | Unknown |

041054D07.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 7 | 102.97 | 209.88 | 102 | 111 | 90 | 1615 | 0.82 | Unknown |
| 9 | 130.57 | 265.04 | 78 | 118 | 96 | 1709 | 0.95 | Deleted |
| 10 | 136.34 | 276.56 | 838 | 129 | 95 | 1663 | 0.97 | Unknown |
| 12 | 185.56 | 374.89 | 93 | 107 | 86 | 1497 | 0.85 | Unknown |
| 13 | 254.37 | 512.36 | 61 | 72 | 58 | 834 | 0.52 | Unknown |
| 14 | 267.83 | 539.24 | 46 | 71 | 57 | 807 | 0.52 | Deleted |
| 15 | 310.57 | 624.60 | 107 | 109 | 88 | 1421 | 0.98 | 1332DEsc |
| 16 | 510.91 | 1024.57 | 30 | 64 | 52 | 642 | 0.63 | Deleted |
| 18 | 1148.54 | 2296.71 | 45 | 58 | 46 | 463 | 1.15 | Deleted |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: GS040601-7MB GS040601-7

Code: 041077D03B

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 06/26/2004 12:00:00 | Counting Start: | 06/26/2004 15:44:40 |
| Sampling Stop: | 06/26/2004 12:00:00 | Decay Time. | 3.74E+000 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 36000 Sec |
| Sample Size . | 5.00E+002 g | Real Time . | 36093 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 041077D03.SPC |

Detector #: 3 (Detector 3)

Energy(keV) = -0.95 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/26/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.27 | 94.38 | 71 | 57 | 45 | 403 | 0.84 | a |
| 2 | 48.09 | 98.00 | 14 | 39 | 31 | 242 | 0.44 | b NET< CL |
| 3 | 63.29 | 128.38 | 104 | 43 | 31 | 236 | 0.46 | a |
| 4 | 66.32 | 134.45 | 154 | 73 | 57 | 550 | 1.12 | b |
| 5 | 74.82 | 151.44 | 47 | 43 | 33 | 272 | 0.47 | a |
| 6 | 77.19 | 156.17 | 69 | 44 | 33 | 272 | 0.53 | b |
| 7 | 84.22 | 170.21 | 45 | 55 | 44 | 394 | 0.80 | a |
| 8 | 92.59 | 186.95 | 280 | 75 | 55 | 522 | 1.12 | a |
| 9 | 139.95 | 281.60 | 120 | 58 | 44 | 362 | 0.93 | a |
| 10 | 143.81 | 289.33 | 42 | 35 | 27 | 181 | 0.52 | b |
| 11 | 181.80 | 365.25 | 14 | 63 | 51 | 445 | 1.20 | a NET< CL |
| 12 | 185.83 | 373.30 | 180 | 61 | 45 | 381 | 0.95 | b |
| 13 | 198.38 | 398.38 | 130 | 77 | 60 | 540 | 1.41 | a |
| 14 | 238.69 | 478.95 | 114 | 50 | 38 | 284 | 0.82 | a |
| 15 | 295.31 | 592.12 | 44 | 45 | 36 | 269 | 0.91 | a |
| 16 | 351.96 | 705.34 | 120 | 46 | 33 | 228 | 1.03 | a |
| 17 | 500.46 | 1002.12 | 21 | 35 | 28 | 156 | 1.22 | a NET< CL |
| 18 | 511.04 | 1023.27 | 994 | 94 | 58 | 439 | 3.02 | a Wide Pk |
| 19 | 558.48 | 1118.10 | 79 | 34 | 24 | 135 | 0.93 | a |
| 20 | 570.34 | 1141.79 | 49 | 34 | 26 | 152 | 1.04 | a |
| 21 | 583.27 | 1167.65 | 68 | 36 | 27 | 155 | 1.13 | a |
| 22 | 597.53 | 1196.14 | 59 | 68 | 54 | 438 | 2.42 | a |
| 23 | 609.41 | 1219.88 | 92 | 50 | 38 | 284 | 1.42 | a |
| 24 | 803.12 | 1607.03 | 70 | 42 | 31 | 181 | 1.91 | a |

041077D03.SPC Analyzed by

=====

PEAK SEARCH RESULTS

=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 911.36 | 1823.36 | 39 | 37 | 28 | 149 | 1.91 | a |
| 26 | 1460.99 | 2921.88 | 142 | 32 | 18 | 62 | 1.87 | a |

041077D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 46.27 | 71 | 57 | 45 | 8 | 124 | 102 | NET<CL |
| 3 | 63.29 | 104 | 43 | 31 | -19 | 102 | 84 | NET<CL |
| 4 | 66.32 | 154 | 73 | 57 | 28 | 147 | 120 | NET<CL |
| 5 | 74.82 | 47 | 43 | 33 | -33 | 99 | 82 | NET<CL |
| 6 | 77.19 | 69 | 44 | 33 | -4 | 99 | 82 | NET<CL |
| 7 | 84.22 | 45 | 55 | 44 | -3 | 129 | 106 | NET<CL |
| 8 | 92.59 | 280 | 75 | 55 | -33 | 130 | 107 | NET<CL |
| 9 | 139.95 | 120 | 58 | 44 | 68 | 89 | 72 | NET<CL |
| 10 | 143.81 | 42 | 35 | 27 | 10 | 95 | 78 | NET<CL |
| 12 | 185.83 | 180 | 61 | 45 | -18 | 113 | 93 | NET<CL |
| 13 | 198.38 | 130 | 77 | 60 | 3 | 130 | 107 | NET<CL |
| 14 | 238.69 | 114 | 50 | 38 | -11 | 95 | 79 | NET<CL |
| 15 | 295.31 | 44 | 45 | 36 | -21 | 108 | 89 | NET<CL |
| 16 | 351.96 | 120 | 46 | 33 | 9 | 94 | 77 | NET<CL |
| 18 | 511.04 | 994 | 94 | 58 | 16 | 172 | 141 | NET<CL |
| 19 | 558.48 | 79 | 34 | 24 | 5 | 66 | 54 | NET<CL |
| 20 | 570.34 | 49 | 34 | 26 | -3 | 102 | 84 | NET<CL |
| 21 | 583.27 | 68 | 36 | 27 | -41 | 82 | 69 | NET<CL |
| 23 | 609.41 | 92 | 50 | 38 | 30 | 89 | 73 | NET<CL |
| 24 | 803.12 | 70 | 42 | 31 | 5 | 65 | 53 | NET<CL |
| 25 | 911.36 | 39 | 37 | 28 | -9 | 67 | 55 | NET<CL |
| 26 | 1460.99 | 142 | 32 | 18 | -8 | 62 | 51 | NET<CL |

041077D03.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: GS040601-7MB GS040601-7

Code: 041077D03B

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 06/26/2004 12:00:00 | Counting Start: | 06/26/2004 15:44:40 |
| Sampling Stop: | 06/26/2004 12:00:00 | Decay Time | 3.74e+000 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 36000 Sec |
| Sample Size | 5.00e+002 g | Real Time | 36093 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041077D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[3.80E-03*En^-3.74E+00 + 1.52E+02*En^7.83E-01] 06/12/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | N | ENERGY (keV) | E (T) | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|---------|--------------|----------|-----------------------|-----------|----------------|----------------|
| Th-234 | 92.50 | N-4. | 7.0E-02 | +- 1.82E-01 | 3.04E-01 | 1.50E-01 | 3.92E+13 |
| Pb-212 | 238.63 | N-1. | 9.4E-03 | +- 1.66E-02 | 2.79E-02 | 1.37E-02 | 1.67E+04 |
| Pb-214 | 351.99 | N | 2.47E-03 | +- 2.55E-02 | 4.26E-02 | 2.10E-02 | 1.40E+07 |
| Bi-214 | 609.32 | N | 9.91E-03 | +- 3.00E-02 | 4.99E-02 | 2.45E-02 | 1.40E+07 |
| K-40 | 1460.75 | N-2. | 2.21E-02 | +- 1.73E-01 | 2.93E-01 | 1.43E-01 | 1.12E+13 |
| Am-241 | 59.54 | N | 2.05E-02 | +- 4.07E-02 | 6.76E-02 | 3.29E-02 | 3.80E+06 |
| Eu-155 | 105.31 | N | 2.15E-03 | +- 1.75E-02 | 2.94E-02 | 1.43E-02 | 4.35E+04 |
| Co-57 | 122.07 | N-2. | 7.5E-03 | +- 3.78E-03 | 6.57E-03 | 3.19E-03 | 6.48E+03 |
| Ce-144 | 133.53 | N | 1.20E-02 | +- 2.85E-02 | 4.75E-02 | 2.30E-02 | 6.82E+03 |
| U-235 | 143.76 | N | 7.94E-03 | +- 2.87E-02 | 4.82E-02b | 2.34E-02 | 6.17E+12 |
| Ce-139 | 165.85 | N-2. | 8.3E-03 | +- 4.59E-03 | 7.91E-03 | 3.85E-03 | 3.30E+03 |
| Th-227 | 236.00 | N | 9.32E-03 | +- 5.24E-02 | 8.71E-02R | 4.27E-02 | 1.90E+05 |
| Pa-231 | 302.67 | N-1. | 0.02E-01 | +- 2.01E-01 | 3.48E-01 | 1.69E-01 | 7.87E+05 |
| Cr-51 | 320.07 | N-2. | 8.4E-03 | +- 4.90E-02 | 8.34E-02 | 4.04E-02 | 6.65E+02 |
| I-131 | 364.48 | N-7. | 4.6E-03 | +- 6.37E-03 | 1.13E-02 | 5.49E-03 | 1.93E+02 |
| Sb-125 | 427.95 | N-1. | 7.6E-03 | +- 1.85E-02 | 3.16E-02 | 1.53E-02 | 2.43E+04 |
| Be-7 | 477.56 | N | 8.54E-03 | +- 5.58E-02 | 9.45E-02 | 4.56E-02 | 1.28E+03 |
| Tl-208 | 583.14 | N | 1.34E-02 | +- 7.83E-03 | 1.23E-02 | 5.92E-03 | 1.27E+14 |
| Sb-124 | 602.71 | N | 7.67E-03 | +- 1.19E-02 | 1.93E-02R | 9.46E-03 | 1.44E+03 |
| Cs-134 | 604.66 | N | 1.75E-02 | +- 7.76E-03 | 1.20E-02A | 5.77E-03 | 1.81E+04 |
| Ru-106 | 621.84 | N-7. | 0.05E-02 | +- 7.02E-02 | 1.25E-01 | 6.03E-02 | 8.84E+03 |
| Ag-110M | 657.75 | N-1. | 2.2E-03 | +- 6.55E-03 | 1.14E-02 | 5.44E-03 | 6.00E+03 |
| Cs-137 | 661.62 | N-1. | 9.4E-03 | +- 7.27E-03 | 1.26E-02 | 6.06E-03 | 2.64E+05 |
| Nb-94 | 702.50 | N-8. | 6.5E-03 | +- 8.79E-03 | 1.55E-02 | 7.51E-03 | 1.78E+08 |
| Bi-212 | 727.17 | N | 1.40E-02 | +- 1.10E-01 | 1.87E-01 | 9.00E-02 | 1.67E+04 |

041077D03.SPC Analyzed by

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | Energy (keV) | T | Concentration (pCi/g) | | MDA | Critical Level | Halflife (hrs) |
|---------|--------------|---|-----------------------|-------------|-----------|----------------|----------------|
| Nb-95 | 765.82 | N | 6.05E-03 | +- 7.09E-03 | 1.16E-02 | 5.57E-03 | 1.54E+03 |
| Co-58 | 810.75 | N | -1.02E-03 | +- 6.33E-03 | 1.10E-02b | 5.26E-03 | 1.70E+03 |
| Mn-54 | 834.81 | N | -2.39E-03 | +- 7.12E-03 | 1.25E-02 | 5.97E-03 | 7.49E+03 |
| Sc-46 | 889.26 | N | -8.34E-03 | +- 7.00E-03 | 1.29E-02 | 6.15E-03 | 2.01E+03 |
| Ra-228 | 911.07 | N | 3.28E-02 | +- 2.99E-02 | 4.84E-02 | 2.31E-02 | 5.04E+04 |
| Pa-234m | 1001.03 | N | 2.40E-01 | +- 2.00E+00 | 3.38E+00 | 1.64E+00 | 3.92E+13 |
| Eu-154 | 1004.80 | N | -5.23E-02 | +- 4.31E-02 | 7.93E-02 | 3.79E-02 | 7.45E+04 |
| Fe-59 | 1099.22 | N | 7.53E-03 | +- 1.32E-02 | 2.20E-02 | 1.04E-02 | 1.08E+03 |
| Zn-65 | 1115.52 | N | -6.22E-03 | +- 1.55E-02 | 2.75E-02 | 1.31E-02 | 5.85E+03 |
| Co-56 | 1238.28 | N | -1.13E-03 | +- 1.34E-02 | 2.33E-02 | 1.11E-02 | 1.86E+03 |
| Na-22 | 1274.54 | N | 4.82E-03 | +- 7.86E-03 | 1.31E-02 | 6.18E-03 | 2.28E+04 |
| Co-60 | 1332.51 | N | -1.85E-03 | +- 8.33E-03 | 1.47E-02 | 6.95E-03 | 4.62E+04 |
| Eu-152 | 1408.08 | N | 3.55E-04 | +- 3.78E-02 | 6.60E-02 | 3.11E-02 | 1.17E+05 |
| Al-26 | 1808.65 | N | 4.18E-03 | +- 8.68E-03 | 1.47E-02 | 6.85E-03 | 6.31E+09 |

MEASURED TOTAL: 4.21E-01 +- 2.52E+00 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN-CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|------------|--------------|-------------|------------|------------|---------|
| 1 | 46.27 | 94.38 | 8 | 124 | 102 | 403 | 0.84 | Deleted |
| 2 | 48.09 | 98.00 | 14 | 39 | 31 | 242 | 0.44 | Deleted |
| 3 | 63.29 | 128.38 | -19 | 102 | 84 | 236 | 0.46 | Deleted |
| 4 | 66.32 | 134.45 | 28 | 147 | 120 | 550 | 1.12 | Deleted |
| 5 | 74.82 | 151.44 | -33 | 99 | 82 | 272 | 0.47 | Deleted |
| 6 | 77.19 | 156.17 | -4 | 99 | 82 | 272 | 0.53 | Deleted |
| 7 | 84.22 | 170.21 | -3 | 129 | 106 | 394 | 0.80 | Deleted |
| 9 | 139.95 | 281.60 | 68 | 89 | 72 | 362 | 0.93 | Deleted |
| 10 | 143.81 | 289.33 | 10 | 95 | 78 | 181 | 0.52 | Deleted |
| 11 | 181.80 | 365.25 | 14 | 63 | 51 | 445 | 1.20 | Deleted |
| 12 | 185.83 | 373.30 | -18 | 113 | 93 | 381 | 0.95 | Deleted |
| 13 | 198.38 | 398.38 | 3 | 130 | 107 | 540 | 1.41 | Deleted |
| 15 | 295.31 | 592.12 | -21 | 108 | 89 | 269 | 0.91 | Deleted |
| 17 | 500.46 | 1002.12 | 21 | 35 | 28 | 156 | 1.22 | Deleted |
| 18 | 511.04 | 1023.27 | 16 | 172 | 141 | 439 | 3.02 | Deleted |
| 19 | 558.48 | 1118.10 | 5 | 66 | 54 | 135 | 0.93 | Deleted |
| 20 | 570.34 | 1141.79 | -3 | 102 | 84 | 152 | 1.04 | Deleted |
| 21 | 583.27 | 1167.65 | -41 | 82 | 69 | 155 | 1.13 | Deleted |
| 22 | 597.53 | 1196.14 | 59 | 68 | 54 | 438 | 2.42 | Unknown |
| 24 | 803.12 | 1607.03 | 5 | 65 | 53 | 181 | 1.91 | Deleted |
| 25 | 911.36 | 1823.36 | -9 | 67 | 55 | 149 | 1.91 | Deleted |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: GS040601-7LCS GS040601-7

Code: 041089D02A

 Sampling Start: 06/28/2004 08:00:00 | Counting Start: 06/28/2004 08:12:04
 Sampling Stop: 06/28/2004 08:00:00 | Decay Time. 2.01E-001 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 1800 Sec
 Sample Size 5.00E+002 g | Real Time 1871 Sec
 Collection Efficiency 1.0000 | Spc. File 041089D02.SPC

Detector #: 2 (Detector 2)

Energy(keV) = -0.77 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/28/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

 ====== PEAK SEARCH RESULTS ======

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 48.86 | 99.23 | 115 | 135 | 109 | 2648 | 0.66 | a |
| 2 | 58.27 | 118.04 | 706 | 283 | 229 | 7237 | 1.58 | a Wide Pk |
| 3 | 59.49 | 120.50 | 10666 | 263 | 134 | 3618 | 0.78 | b |
| 4 | 87.95 | 177.40 | 29448 | 389 | 151 | 4602 | 0.80 | a HiResid |
| 5 | 110.63 | 222.75 | 71 | 84 | 68 | 1274 | 0.40 | a |
| 6 | 122.03 | 245.55 | 14497 | 283 | 122 | 2998 | 0.80 | a HiResid |
| 7 | 136.49 | 274.45 | 1862 | 160 | 111 | 2477 | 0.85 | a |
| 8 | 165.83 | 333.13 | 6765 | 218 | 118 | 2575 | 0.93 | a |
| 9 | 255.07 | 511.56 | 139 | 133 | 108 | 2145 | 1.03 | a |
| 10 | 279.00 | 559.43 | 98 | 79 | 63 | 973 | 0.50 | a |
| 11 | 365.36 | 732.11 | 67 | 112 | 92 | 1547 | 0.93 | a NET< CL |
| 12 | 391.70 | 784.79 | 3483 | 170 | 101 | 1724 | 1.16 | a |
| 13 | 510.45 | 1022.23 | 133 | 109 | 88 | 1417 | 1.30 | a |
| 14 | 592.55 | 1186.40 | 48 | 60 | 48 | 572 | 0.65 | a NET< CL |
| 15 | 661.69 | 1324.66 | 24419 | 328 | 81 | 1218 | 1.39 | a |
| 16 | 898.13 | 1797.45 | 3692 | 159 | 84 | 1387 | 1.54 | a |
| 17 | 961.71 | 1924.58 | 111 | 146 | 119 | 2184 | 2.34 | a NET< CL |
| 18 | 1173.27 | 2347.61 | 24108 | 320 | 63 | 700 | 1.83 | a HiResid |
| 19 | 1332.47 | 2665.96 | 22451 | 303 | 36 | 240 | 2.01 | a HiResid |
| 20 | 1423.97 | 2848.93 | 25 | 25 | 18 | 79 | 1.11 | a |
| 21 | 1835.92 | 3672.66 | 2259 | 98 | 21 | 74 | 2.41 | a |

041089D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 1 | 48.86 | 115 | 135 | 109 | 114 | 135 | 109 | |
| 4 | 87.95 | 29448 | 389 | 151 | 29446 | 389 | 151 | |
| 13 | 510.45 | 133 | 109 | 88 | 92 | 109 | 88 | |
| 16 | 898.13 | 3692 | 159 | 84 | 3691 | 159 | 84 | |
| 17 | 961.71 | 111 | 146 | 119 | 109 | 146 | 119 | NET<CL |

041089D02.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: GS040601-7LCS GS040601-7

Code: 041089D02A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 06/28/2004 08:00:00 | Counting Start: | 06/28/2004 08:12:04 |
| Sampling Stop: | 06/28/2004 08:00:00 | Decay Time | 2.01e-001 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00e+002 g | Real Time | 1871 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041089D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[5.36E-04*En^-4.56E+00 + 1.37E+02*En^7.41E-01] 06/12/2004

Library File:ANALYTICAL.LIB (Analytical)

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | N | | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|----------|--------------------------|-----------|-------------------|-------------------|
| | ENERGY (keV) | E T | | | | |
| Am-241 | 59.54 | 1.99E+02 | +- 4.90E+00 | 5.05E+00 | 2.50E+00 | 3.79E+06 |
| Cd-109 | 88.02 | 1.40E+03 | +- 1.86E+01 | 1.45E+01 | 7.21E+00 | 1.11E+04 |
| Co-57 | 122.07 | 1.86E+01 | +- 3.64E-01 | 3.17E-01 | 1.57E-01 | 6.50E+03 |
| Ce-139 | 165.85 | 9.64E+00 | +- 3.11E-01 | 3.40E-01 | 1.68E-01 | 3.30E+03 |
| Hg-203 | 279.18 | 1.94E-01 | +- 1.56E-01 | 2.53E-01 | 1.24E-01 | 1.12E+03 |
| Sn-113 | 391.68 | 1.10E+01 | +- 5.38E-01 | 6.46E-01 | 3.19E-01 | 2.76E+03 |
| Cs-137 | 661.62 | 8.68E+01 | +- 1.17E+00 | 5.87E-01 | 2.89E-01 | 2.64E+05 |
| Y-88 | Average:x | 1.48E+01 | +- 4.55E-01 | | | 2.56E+03 |
| | 898.02 | 1.50E+01 | +- 6.47E-01 | 6.98E-01 | 3.44E-01 | 2.56E+03 |
| | 1836.01 | 1.47E+01 | +- 6.39E-01 | 2.93E-01 | 1.38E-01 | 2.56E+03 |
| Co-60 | Average:x | 1.13E+02 | +- 1.07E+00 | | | 4.62E+04 |
| | 1173.21 | 1.12E+02 | +- 1.48E+00 | 5.97E-01 | 2.92E-01 | 4.62E+04 |
| | 1332.48 | 1.14E+02 | +- 1.54E+00 | 3.81E-01 | 1.83E-01 | 4.62E+04 |

MEASURED TOTAL: 1.86E+03 +- 2.75E+01 pCi/g

=====
 UNKNOWN, SUM or ESCAPE PEAKS
 =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 48.86 | 99.23 | 114 | 135 | 109 | 2648 | 0.66 | Unknown |
| 2 | 58.27 | 118.04 | 706 | 283 | 229 | 7237 | 1.58 | Unknown |
| 5 | 110.63 | 222.75 | 71 | 84 | 68 | 1274 | 0.40 | Unknown |

041089D02.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 7 | 136.49 | 274.45 | 1862 | 160 | 111 | 2477 | 0.85 | Unknown |
| 9 | 255.07 | 511.56 | 139 | 133 | 108 | 2145 | 1.03 | Unknown |
| 11 | 365.36 | 732.11 | 67 | 112 | 92 | 1547 | 0.93 | Deleted |
| 13 | 510.45 | 1022.23 | 92 | 109 | 88 | 1417 | 1.30 | Unknown |
| 14 | 592.55 | 1186.40 | 48 | 60 | 48 | 572 | 0.65 | Deleted |
| 17 | 961.71 | 1924.58 | 109 | 146 | 119 | 2184 | 2.34 | Deleted |
| 20 | 1423.97 | 2848.93 | 25 | 25 | 18 | 79 | 1.11 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: GS040720-2LCS GS040720-2

Code: 041259D08A

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 07/20/2004 12:00:00 | Counting Start: | 07/21/2004 09:48:13 |
| Sampling Stop: | 07/20/2004 12:00:00 | Decay Time. | 2.18E+001 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 1800 Sec |
| Sample Size . | 5.00E+002 g | Real Time . | 1860 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 041259D08.SPC |

Detector #: 8 (Detector 8)
 Energy(keV) = -0.30 + 0.500*Ch +-1.89E-07*Ch^2 + 9.91E-11*Ch^3 07/21/2004
 FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 41.76 | 84.05 | 9 | 86 | 70 | 1366 | 0.35 | a NET< CL |
| 2 | 43.13 | 86.81 | 290 | 221 | 179 | 5483 | 1.08 | b |
| 3 | 49.31 | 99.16 | 2092 | 392 | 314 | 14558 | 1.51 | a Wide Pk |
| 4 | 59.50 | 119.52 | 59776 | 550 | 207 | 8667 | 0.75 | a HiResid |
| 5 | 88.04 | 176.56 | 48126 | 480 | 160 | 5177 | 0.83 | a |
| 6 | 122.01 | 244.45 | 15945 | 288 | 113 | 2578 | 0.82 | a HiResid |
| 7 | 136.45 | 273.32 | 2053 | 152 | 100 | 2012 | 0.90 | a |
| 8 | 165.81 | 332.01 | 5821 | 192 | 96 | 1855 | 0.90 | a |
| 9 | 255.40 | 511.08 | 145 | 134 | 108 | 2004 | 1.20 | a |
| 10 | 391.60 | 783.33 | 2573 | 139 | 78 | 1274 | 0.97 | a HiResid |
| 11 | 477.50 | 955.03 | 73 | 111 | 90 | 1494 | 1.29 | a NET< CL |
| 12 | 477.95 | 955.94 | 1 | 67 | 55 | 747 | 0.66 | b NET< CL |
| 13 | 539.25 | 1078.46 | 38 | 58 | 47 | 543 | 0.69 | a NET< CL |
| 14 | 661.60 | 1322.97 | 21735 | 307 | 72 | 995 | 1.42 | a |
| 15 | 801.85 | 1603.21 | 10 | 125 | 103 | 1562 | 2.45 | a NET< CL |
| 16 | 897.85 | 1794.98 | 3066 | 149 | 82 | 1243 | 1.66 | a |
| 17 | 1173.12 | 2344.54 | 21729 | 302 | 54 | 553 | 1.81 | a HiResid |
| 18 | 1332.40 | 2662.27 | 19745 | 284 | 34 | 218 | 1.97 | a HiResid |
| 19 | 1836.89 | 3666.83 | 1769 | 86 | 15 | 36 | 2.36 | a |

041259D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET080716.BKG (0419002-28 Weekly Bkg.)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 3 | 49.31 | 2092 | 392 | 314 | 2092 | 392 | 314 | |
| 5 | 88.04 | 48126 | 480 | 160 | 48124 | 480 | 160 | |
| 15 | 801.85 | 10 | 125 | 103 | 7 | 125 | 103 | NET<CL |

041259D08.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: GS040720-2LCS GS040720-2

Code: 041259D08A

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 07/20/2004 12:00:00 | Counting Start: | 07/21/2004 09:48:13 |
| Sampling Stop: | 07/20/2004 12:00:00 | Decay Time. | 2.18e+001 Hrs |
| Buildup Time. | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00e+002 g | Real Time | 1860 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041259D08.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 8 (Detector 8)

Efficiency File: (D08) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: . . . ANALYTICAL.LIB (Analytical)

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | Critical MDA | Halflife Level | Halflife (hrs) |
|---------|-----------------|----------|--------------------------|-----------------|-------------------|-------------------|
| Am-241 | 59.54 | 2.16E+02 | +- 1.99E+00 | 1.51E+00 | 7.50E-01 | 3.79E+06 |
| Cd-109 | 88.02 | 1.37E+03 | +- 1.37E+01 | 9.23E+00 | 4.58E+00 | 1.11E+04 |
| Co-57 | 122.07 | 1.95E+01 | +- 3.52E-01 | 2.80E-01 | 1.39E-01 | 6.50E+03 |
| Ce-139 | 165.85 | 8.69E+00 | +- 2.87E-01 | 2.91E-01 | 1.43E-01 | 3.30E+03 |
| Sn-113 | 391.68 | 8.72E+00 | +- 4.70E-01 | 5.36E-01 | 2.63E-01 | 2.76E+03 |
| Cs-137 | 661.62 | 8.44E+01 | +- 1.19E+00 | 5.66E-01 | 2.78E-01 | 2.64E+05 |
| Y-88 | Average:x | 1.37E+01 | +- 4.69E-01 | | | 2.56E+03 |
| | 898.02 | 1.39E+01 | +- 6.78E-01 | 7.58E-01 | 3.73E-01 | 2.56E+03 |
| | 1836.01 | 1.34E+01 | +- 6.51E-01 | 2.41E-01 | 1.10E-01 | 2.56E+03 |
| Co-60 | Average:x | 1.14E+02 | +- 1.14E+00 | | | 4.62E+04 |
| | 1173.21 | 1.14E+02 | +- 1.58E+00 | 5.74E-01 | 2.80E-01 | 4.62E+04 |
| | 1332.48 | 1.14E+02 | +- 1.65E+00 | 4.14E-01 | 1.99E-01 | 4.62E+04 |
| Hg-203 | 279.18 | MDA | | 4.35E-01 | 2.15E-01 | 1.12E+03 |

MEASURED TOTAL: 1.84E+03 +- 1.96E+01 pCi/g

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 1 | 41.76 | 84.05 | 9 | 86 | 70 | 1366 | 0.35 | Deleted |
| 2 | 43.13 | 86.81 | 290 | 221 | 179 | 5483 | 1.08 | Unknown |
| 3 | 49.31 | 99.16 | 2092 | 392 | 314 | 14558 | 1.51 | Unknown |

041259D08.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 7 | 136.45 | 273.32 | 2053 | 152 | 100 | 2012 | 0.90 | Unknown |
| 9 | 255.40 | 511.08 | 145 | 134 | 108 | 2004 | 1.20 | Unknown |
| 11 | 477.50 | 955.03 | 73 | 111 | 90 | 1494 | 1.29 | Deleted |
| 12 | 477.95 | 955.94 | 1 | 67 | 55 | 747 | 0.66 | Deleted |
| 13 | 539.25 | 1078.46 | 38 | 58 | 47 | 543 | 0.69 | Deleted |
| 15 | 801.85 | 1603.21 | 7 | 125 | 103 | 1562 | 2.45 | Deleted |

Gamma Spectrometer Run Log

Date: 6/26/04Reviewed By/Date: MCG-27-04

| Sample ID | Ver ¹ | Det. No. | Geo ² | Count Dur. (min.) ³ | Start Time | Analyst | File ID/Comments | Exported? |
|-------------|------------------|----------|------------------|-----------------------------------|------------|---------|------------------|-----------|
| 0405096-2 | MC | 1 | 13 | 600 | 11:22 | JP | 041507D01.SPC MC | |
| ↓ -4 | JP | 2 | ↓ | 30 | ↓ | ↓ | 041074D02.SPC JP | |
| ↓ -13 | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041072D03.SPC JP | |
| 0405222-5 | JP | 4 | 11 | 30 | ↓ | ↓ | 041132D04.SPC JP | |
| 0405096-5 | JP | 8 | 13 | 30 | 11:29 | JP | 041059D08.SPC JP | |
| 0405222-6 | JP | 7 | 11 | 30 | ↓ | ↓ | 040993D07.SPC JP | |
| ↓ -7 | ↓ | 10 | ↓ | ↓ | ↓ | ↓ | 041040D10.SPC JP | |
| 0405096-13D | JP | 2 | 13 | 30 | 12:03 | JP | 041075D02.SPC JP | |
| ↓ -14 | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041073D03.SPC JP | |
| ↓ -17 | ↓ | 8 | ↓ | ↓ | ↓ | ↓ | 041060D08.SPC JP | |
| 0405222-8 | JP | 4 | 11 | 30 | 12:12 | JP | 041133D04.SPC JP | |
| ↓ -9 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 040994D07.SPC JP | |
| ↓ -10 | ↓ | 10 | ↓ | ↓ | ↓ | ↓ | 041041D10.SPC JP | |
| 0405096-20 | JP | 2 | 13 | 30 | 12:41 | JP | 041076D02.SPC JP | |
| ↓ -22 | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041074D03.SPC JP | |
| ↓ -31 | ↓ | 8 | ↓ | ↓ | ↓ | ↓ | 041061D08.SPC JP | |
| 0405228-1 | JP | 4 | 11 | 30 | 12:50 | JP | 041134D04.SPC JP | |
| ↓ -2 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 040995D07.SPC JP | |
| ↓ -3 | ↓ | 10 | ↓ | ↓ | ↓ | ↓ | 041042D10.SPC JP | |
| 0405096-29 | JP | 2 | 13 | 30 | 13:18 | JP | 041077D02.SPC JP | |
| ↓ -31D | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041075D03.SPC JP | |
| ↓ -32 | ↓ | 8 | ↓ | ↓ | ↓ | ↓ | 041062D08.SPC JP | |
| 0405228-4 | JP | 4 | 11 | 30 | 13:28 | JP | 041135D04.SPC JP | |
| ↓ -4D | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 040996D07.SPC JP | |

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.² Calibration geometry.³ Count Duration.

78932

B

Gamma Spectrometer Run Log

Date: 6|26|04

Reviewed By/Date: MC 6-27-04

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

² Calibration geometry.

³ Count Duration.

278933 B

Gamma Spectrometer Run Log

Date: 6-27-04Reviewed By/Date: MC 6-27-04

| Sample ID | Ver ¹ | Det. No. | Geo ² | Count Dur. (min.) ³ | Start Time | Analyst | File ID/Comments | Exported? |
|------------|------------------|----------|------------------|-----------------------------------|------------|---------|------------------|-----------|
| 0406026-1 | MC | 1 | 13 | 30 | 17:16 | MC | 041509D01.SPC MC | |
| ↓ -2 | MC | 8 | 1 | 1 | 17:17 | ↓ | 041066D08.SPC MC | |
| 0405096-1 | Z | 11 | | | 17:16 | MC | | |
| ↓ -3 | | 3 | | | 18:43 | | | |
| 0405096-7 | MC | 4 | | 30 | 30 17:33 | | 041141D04.SPC | |
| ↓ -8 | MC | 7 | | 30 | 17:16 | | 041000D07.SPC MC | |
| ↓ -9 | MC | 10 | ↓ | ↓ | 17:17 | ↓ | 041047D10.SPC MC | |
| 0406026-3 | MC | 1 | 13 | 30 | 18:20 | MC | 041510D01.SPC MC | |
| ↓ -10 | MC | 8 | 1 | 1 | | ↓ | 041067D08.SPC MC | |
| 0405096-10 | MC | 4 | 11 | 30 | ↓ | MC | 041142D04.SPC MC | |
| ↓ -11 | MC | 7 | | | 18:21 | | 041001D07.SPC MC | |
| ↓ -11D | MC | 10 | ↓ | ↓ | ↓ | ↓ | 041048D10.SPC MC | |
| 0406026-4 | MC | 1 | 13 | 30 | 19:05 | MC | 041511D01.SPC MC | |
| ↓ -8 | MC | 8 | 13 | 30 | | MC | 041068D08.SPC MC | |
| 0405096-12 | | 4 | 11 | | | MC | | |
| ↓ -12D | | 7 | | | | | | |
| 0405096-15 | MC | 10 | ↓ | 30 | ↓ | ↓ | 041049D10.SPC MC | |
| 0406026-9 | MC | 1 | 13 | 30 | 20:03 | MC | 041512D01.SPC MC | |
| ↓ -10 | MC | 8 | 1 | 1 | | ↓ | 041069D08.SPC MC | |
| 0406026-11 | MC | 2 | 13 | 30 | | MC | 041084D02.SPC MC | |
| ↓ -12 | | 3 | | | | | 041083D03.SPC MC | |
| ↓ -13 | | 4 | | | | | 041144D04.SPC MC | |
| ↓ -14 | MC | 7 | ↓ | ↓ | ↓ | ↓ | 041003D07.SPC MC | |
| 0405096-16 | ↓ | 10 | 11 | 30 | ↓ | MC | 041050D10.SPC MC | |

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.² Calibration geometry.³ Count Duration.

278934 B

Form 754r9.frm (9/19/2001)

000355

Gamma Spectrometer Run Log

Date: 6-27-04

Reviewed By/Date: JP 6/28/04

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

² Calibration geometry.

* GEO. 13 MC 6/27/04

³ Count Duration.

278935 B

Gamma Spectrometer Run Log

Date: 6/28/04Reviewed By/Date: JP 6/28/04

| Sample ID | Ver ¹ | Det. No. | Geo ² | Count Dur. (min.) ³ | Start Time | Analyst | File ID/Comments | Exported? |
|----------------|------------------|----------|------------------|-----------------------------------|------------|---------|------------------|-----------|
| 0406034-1 | JP | 1 | 1 | 210 | 7:32 | JP | 041516001.SPC | JP |
| 0406055-1D | ↓ | 8 | ↓ | 240 | ↓ | ↓ | 041073D08.SPC | JP |
| 0406034-2 | ↓ | 10 | ↓ | 210 | ↓ | ↓ | 041054D10.SPC | JP |
| GS040621-1LCS | JP | 2 | ↓ | 30 | ↓ | ↓ | 041088D02.SPC | JP |
| 0406026-9 | ↓ | 3 | 13 | ↓ | ↓ | ↓ | 041087D03.SPC | JP |
| GS040615-4LCS | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 041007D07.SPC | JP |
| GS040601-7LCS | JP | 2 | 13 | 30 | 8:12 | JP | 041089D02.SPC | JP |
| GS040621-1LCSD | ↓ | 3 | 1 | 30 | ↓ | ↓ | 041088D03.SPC | JP |
| 0406005-3 | ↓ | 7 | 11 | 30 | ↓ | ↓ | 041008D07.SPC | JP |
| 0406005-1D | JP | 4 | 1 | 240 | 7:46 | JP | 041149D04.SPC | JP |
| 0406005-3D | JP | 2 | 11 | 30 | 8:51 | JP | 041090D02.SPC | JP |
| -4 | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041089D03.SPC | JP |
| -5 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 041009D07.SPC | JP |
| -6 | JP | 2 | 11 | 30 | 9:40 | JP | 041091D02.SPC | JP |
| -7 | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041090D03.SPC | JP |
| -8 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 041010D07.SPC | JP |
| -9 | JP | 2 | 11 | 30 | 10:16 | JP | 041092D02.SPC | JP |
| -10 | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041091D03.SPC | JP |
| 0406020-4 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 041011D07.SPC | JP |
| -5 | JP | 2 | 11 | 30 | 10:55 | JP | 041093D02.SPC | JP |
| -5D | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041092D03.SPC | JP |
| -6 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 041012D07.SPC | JP |
| 0406065-1 | JP | 1 | 1 | 180 | 11:13 | JP | 041517D01.SPC | JP |
| 0406088-1 | ↓ | 10 | ↓ | ↓ | ↓ | ↓ | 041055D10.SPC | JP |

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.² Calibration geometry.³ Count Duration.

Gamma Spectrometer Run Log

Date: 7/1/04Reviewed By/Date: JP 7/2/04

| Sample ID | Ver ¹ | Det. No. | Geo ² | Count Dur. (min.) ³ | Start Time | Analyst | File ID/Comments | Exported? |
|---------------|------------------|----------------------|------------------|-----------------------------------|------------|---------|------------------|-----------|
| 0404255-19 | JP | 8 | 17/26 | 45 | 8:16 | JP | 041093D08.SPC | JP |
| 0405096-19 | JP | 2 | 11 | 30 | | | 041128D02.SPC | JP |
| -27 | | 3 | | | | | 041122D03.SPC | JP |
| -28 | | 7 | | | | | 041053D07.SPC | JP |
| ↓ -25 | ↓ | 10 | ↓ | ↓ | ↓ | ↓ | 041082D10.SPC | JP |
| 0405096-30 | ↓ | 4 | 11 | ↓ | 8:25 | JP | 041214D04.SPC | JP |
| GS040601-6MB | JP | 104 ^{spur} | 11 | 1000 | 9:03 | JP | 041086D10.SPC | JP |
| ↓ LCS | JP | 7 | | 30 | ↓ | ↓ | 041054D07.SPC | JP |
| 0405096-26 | ↓ | 4+10 ^{spur} | ↓ | ↓ | ↓ | ↓ | 041215D04.SPC | JP |
| GS040514-2MB | JP | 8 | 17/26 | 90 | 9:08 | JP | 041094D08.SPC | JP |
| 0405097-1 | JP | 2 | 11 | 30 | 9:11 | JP | 041129D02.SPC | JP |
| -1D | ↓ | 3 | ↓ | ↓ | ↓ | ↓ | 041123D03.SPC | JP |
| -4 | JP | 4 | 11 | 30 | 9:39 | JP | 041216D04.SPC | JP |
| -5 | ↓ | 7 | | | ↓ | ↓ | 041055D07.SPC | JP |
| -6 | JP | 2 | | | 9:46 | JP | 041130D02.SPC | JP |
| -7 | ↓ | 3 | | | ↓ | ↓ | 041124D03.SPC | JP |
| -8 | JP | 2 | | | 10:24 | JP | 041131D02.SPC | JP |
| -9 | | 3 | | | | | 041125D03.SPC | JP |
| -10 | | 4 | | | | | 041217D04.SPC | JP |
| ↓ -11 | ↓ | 7 | ↓ | ↓ | ↓ | ↓ | 041056D07.SPC | JP |
| GS040514-2LCS | JP | 8 | 17 | 30 | 10:45 | JP | 041095D08.SPC | JP |
| 0405097-11D | MC | 2 | 11 | 30 | 11:09 | JP | 041132D02.SPC | MC |
| ↓ -12 | | 3 | | | | | 041126D03.SPC | MC |
| ↓ -13 | ↓ | 4 | ↓ | ↓ | ↓ | ↓ | 041218D04.SPC | MC |

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.² Calibration geometry.³ Count Duration.

278946 B

Form 754r9.frm (9/19/2001)

000354

Gamma Spectrometer Run Log

Date: 7/1/04

Reviewed By/Date: JP 7/2/04

~~MC~~
7.1104

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

² Calibration geometry.

³ Count Duration.

* COUNTED ON A PUCK MC 7/1/04

273947 B

Gamma Spectrometer Run Log

Date: 7/3/04

Reviewed By/Date: X2 7.4.04

Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

² Calibration geometry. ³ Samples counted on a puck. JP 7/3/04
³ Count Duration.

³ Count Duration.

278952 B

Gamma Spectrometer Run Log

Date: 7-4-04

Reviewed By/Date: 72 7-5-04

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

² Calibration geometry.

³ Count Duration

*Counted on Prod

22 7-4-09

273953 B

Gamma Spectrometer Run Log

Date: 7-20-04

Reviewed By/Date: CWS 7/21/04

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

² Calibration geometry.

³ Count Duration.

280403 B

Gamma Spectrometer Run Log

Date: 7/21/04Reviewed By/Date: JP 7/23/04

| Sample ID | Ver ¹ | Det. No. | Geo ² | Count Dur. (min.) ³ | Start Time | Analyst | File ID/Comments | Exported? |
|-----------------------------|------------------|----------|------------------|-----------------------------------|------------|---------------|-------------------|-----------|
| G-S040720-2MB | SH | 8 | 13 | 120 | 0740 | LCB | 041258D08.SPC | SH |
| ↓ -ZLLS | ↓ | ↓ | ↓ | 30 | 0948 | SH | 041259D08.SPC | L |
| 0406228-5D | MC | 7 | 1 | 300 | 0740 | LCB | 041215D07.SPC MC | |
| 0406221-10 | LCB | 3 | 11 | 30 | 0742 | LCB | 041295D03.SPC LCB | |
| ↓ -11 | WB | 4 | ↓ | ↓ | 0814 | ↓ | 041418D04.SPC | LCB |
| 0406221-12 | LCB | 3 | 11 | 30 | 0820 | WB | 041296D03.SPC | ↓ |
| ↓ -13 | LCB | 4 | ↓ | ↓ | 0848 | ↓ | 041419D04.SPC | LCB |
| ↓ -14 | LCB | 3 | ↓ | ↓ | 0852 | ↓ | 041297D03.SPC | ↓ |
| 0406112-1 | LCB | 1 | 13 | 30 | 0854 | LCB | 041863D01.SPC | LCB |
| G-S040713-7MB 0406221-10 | SH | 4 | 11 | 30 | 0921 | LCB | 041420D04.SPC | SH |
| G-S040713-7LLS | ↓ | 3 | ↓ | ↓ | 0930 | ↓ | 041298D03.SPC | ↓ |
| 0406228-6 | MC | 12 | 1 | 180 | 0924 | LCB | 041275D02.SPC MC | |
| ↓ -7 | WB | 10 | ↓ | 120 | 0928 | ↓ | 041248D10.SPC | LCB |
| 0406112-2 | SH | 1 | 13 | 30 | 0933 | LCB | 041804D01.SPC | SH |
| ↓ -3 | WB | ↓ | ↓ | ↓ | 10:11 | SH | 041805D01.SPC | LCB |
| G-S040713-7LLSDWB | 4 | 11 | 30 | 10:13 | SH | 041421D04.SPC | LCB | |
| 0406228-8 | MC | 8 | 1 | 240 | 10:34 | SH | 041260D08.SPC MC | |
| 0406246-3 | LCB | 3 | 11 | 30 | 1056 | LCB | 041299D03.SPC | LCB |
| ↓ -3D | ↓ | 4 | 11 | ↓ | ↓ | ↓ | 041422D04.SPC | ↓ |
| 0406112-4 | LCB | 1 | 13 | 30 | 1100 | LCB | 041806D01.SPC | LCB |
| 0406246-4 | LCB | 3 | 11 | 30 | 1149 | LCB | 041300D03.SPC | LCB |
| ↓ -4D | ↓ | 4 | ↓ | ↓ | ↓ | ↓ | 041423D04.SPC | ↓ |
| 0406112-5 | WB | 1 | 13 | 30 | 1150 | WB | 041807D01.SPC | WB |
| 0406228-9 | MC | 10 | 1 | 120 | 1155 | LCB | 041249D10.SPC MC | |

¹ Analyst will verify the position, detector, and geometry when the sample is removed from the detector.² Calibration geometry.³ Count Duration.

7/21/04

280404 B

Form 754r9.frm (9/19/2001)

000363

Library File: Kent&Sullivan_FANP+Pa-231.lib
 File I.D.: FANP (Fiss. Act. and Nat. Prod)+Pa-231

| Pk. | Energy | Isotope | 2ndary | | Gamma | | |
|-------|---------|---------|--------|-------|----------|------------|-----|
| # | (keV) | Name | Pk # | Type | Fraction | Halflife | |
| <hr/> | | | | | | | |
| 43 | 657.75 | Ag-110M | 45 | NET | 0.9400 | 2.4990E+02 | dys |
| 45 | 677.71 | Ag-110M | 48 | QUANT | 0.1068 | 2.4990E+02 | dys |
| 48 | 706.67 | Ag-110M | 51 | QUANT | 0.1668 | 2.4990E+02 | dys |
| 51 | 763.93 | Ag-110M | 61 | QUANT | 0.2214 | 2.4990E+02 | dys |
| 61 | 884.67 | Ag-110M | 64 | QUANT | 0.7220 | 2.4990E+02 | dys |
| 64 | 937.48 | Ag-110M | 86 | QUANT | 0.3413 | 2.4990E+02 | dys |
| 86 | 1384.27 | Ag-110M | 89 | QUANT | 0.2412 | 2.4990E+02 | dys |
| 89 | 1505.00 | Ag-110M | 43 | QUANT | 0.1306 | 2.4990E+02 | dys |
| 92 | 1808.65 | Al-26 | 0 | NET | 0.9973 | 7.2000E+05 | yrs |
| 1 | 59.54 | Am-241 | 0 | NET | 0.3590 | 4.3310E+02 | yrs |
| 31 | 477.56 | Be-7 | 0 | NET | 0.1052 | 5.3440E+01 | dys |
| 50 | 727.17 | Bi-212 | 0 | NET | 0.0658 | 1.9100E+00 | yrs |
| 40 | 609.32 | Bi-214 | 75 | NET | 0.4609 | 1.6000E+03 | yrs |
| 75 | 1120.28 | Bi-214 | 40 | QUANT | 0.1510 | 1.6000E+03 | yrs |
| 11 | 165.85 | Ce-139 | 0 | NET | 0.8035 | 1.3766E+02 | dys |
| 7 | 133.53 | Ce-144 | 46 | NET | 0.1109 | 2.8414E+02 | dys |
| 46 | 696.49 | Ce-144 | 7 | QUANT | 0.0130 | 2.8414E+02 | dys |
| 58 | 846.81 | Co-56 | 69 | QUANT | 0.9999 | 7.7300E+01 | dys |
| 69 | 1037.83 | Co-56 | 78 | QUANT | 0.1400 | 7.7300E+01 | dys |
| 78 | 1175.13 | Co-56 | 79 | QUANT | 0.0228 | 7.7300E+01 | dys |
| 79 | 1238.28 | Co-56 | 83 | NET | 0.6760 | 7.7300E+01 | dys |
| 83 | 1360.22 | Co-56 | 91 | QUANT | 0.0429 | 7.7300E+01 | dys |
| 91 | 1771.49 | Co-56 | 58 | QUANT | 0.1570 | 7.7300E+01 | dys |
| 6 | 122.07 | Co-57 | 8 | NET | 0.8560 | 2.7000E+02 | dys |
| 8 | 136.43 | Co-57 | 6 | QUANT | 0.1068 | 2.7000E+02 | dys |
| 56 | 810.75 | Co-58 | 0 | NET | 0.9945 | 7.0780E+01 | dys |
| 77 | 1173.23 | Co-60 | 82 | QUANT | 0.9997 | 5.2721E+00 | yrs |
| 82 | 1332.51 | Co-60 | 77 | NET | 0.9998 | 5.2721E+00 | yrs |
| 24 | 320.07 | Cr-51 | 0 | NET | 0.1000 | 2.7700E+01 | dys |
| 32 | 563.26 | Cs-134 | 33 | QUANT | 0.0835 | 2.0623E+00 | yrs |
| 33 | 569.29 | Cs-134 | 38 | QUANT | 0.1538 | 2.0623E+00 | yrs |
| 38 | 604.66 | Cs-134 | 54 | NET | 0.9762 | 2.0623E+00 | yrs |
| 54 | 795.76 | Cs-134 | 55 | QUANT | 0.8553 | 2.0623E+00 | yrs |
| 55 | 801.84 | Cs-134 | 76 | QUANT | 0.0869 | 2.0623E+00 | yrs |
| 76 | 1167.86 | Cs-134 | 84 | QUANT | 0.0180 | 2.0623E+00 | yrs |
| 84 | 1365.13 | Cs-134 | 32 | QUANT | 0.0304 | 2.0623E+00 | yrs |
| 44 | 661.62 | Cs-137 | 0 | NET | 0.8512 | 3.0104E+01 | yrs |
| 26 | 344.30 | Eu-152 | 53 | QUANT | 0.2650 | 1.3330E+01 | yrs |
| 53 | 778.90 | Eu-152 | 71 | QUANT | 0.1294 | 1.3330E+01 | yrs |
| 71 | 1085.80 | Eu-152 | 73 | QUANT | 0.1021 | 1.3330E+01 | yrs |
| 73 | 1112.07 | Eu-152 | 87 | QUANT | 0.1364 | 1.3330E+01 | yrs |
| 87 | 1408.08 | Eu-152 | 26 | NET | 0.2100 | 1.3330E+01 | yrs |
| 18 | 248.04 | Eu-154 | 35 | QUANT | 0.0660 | 8.5019E+00 | yrs |
| 35 | 591.70 | Eu-154 | 60 | QUANT | 0.0460 | 8.5019E+00 | yrs |
| 60 | 873.20 | Eu-154 | 66 | QUANT | 0.1227 | 8.5019E+00 | yrs |
| 66 | 996.30 | Eu-154 | 68 | QUANT | 0.1030 | 8.5019E+00 | yrs |
| 68 | 1004.80 | Eu-154 | 18 | NET | 0.1801 | 8.5019E+00 | yrs |
| 4 | 105.31 | Eu-155 | 0 | NET | 0.2120 | 4.9600E+00 | yrs |
| 14 | 192.34 | Fe-59 | 72 | QUANT | 0.0308 | 4.5100E+01 | dys |
| 72 | 1099.22 | Fe-59 | 81 | NET | 0.5650 | 4.5100E+01 | dys |
| 81 | 1291.56 | Fe-59 | 14 | QUANT | 0.4320 | 4.5100E+01 | dys |

| Pk. # | Energy (keV) | Isotope Name | 2ndary Pk # | Gamma | | |
|----------|-----------------|-----------------|----------------|-------|----------|----------------|
| | | | | Type | Fraction | Halflife |
| 20 | 284.29 | I-131 | 28 | QUANT | 0.0614 | 8.0405E+00 dys |
| 28 | 364.48 | I-131 | 20 | NET | 0.8170 | 8.0405E+00 dys |
| 88 | 1460.75 | K-40 | 0 | NET | 0.1100 | 1.2800E+09 yrs |
| 57 | 834.81 | Mn-54 | 0 | NET | 0.9997 | 3.1220E+02 dys |
| 80 | 1274.54 | Na-22 | 0 | NET | 0.9994 | 2.6000E+00 yrs |
| 47 | 702.50 | Nb-94 | 0 | NET | 0.9790 | 2.0300E+04 yrs |
| 52 | 765.82 | Nb-95 | 0 | NET | 0.9999 | 6.4020E+01 dys |
| 23 | 302.67 | Pa-231 | 0 | NET | 0.0230 | 3.2800E+04 dys |
| 67 | 1001.03 | Pa-234m | 0 | NET | 0.0059 | 4.4680E+09 yrs |
| 5 | 115.18 | Pb-212 | 17 | QUANT | 0.0059 | 1.9100E+00 yrs |
| 17 | 238.63 | Pb-212 | 22 | NET | 0.4330 | 1.9100E+00 yrs |
| 22 | 300.09 | Pb-212 | 5 | QUANT | 0.0327 | 1.9100E+00 yrs |
| 21 | 295.22 | Pb-214 | 27 | QUANT | 0.1920 | 1.6000E+03 yrs |
| 27 | 351.99 | Pb-214 | 21 | NET | 0.3710 | 1.6000E+03 yrs |
| 25 | 338.40 | Ra-228 | 63 | QUANT | 0.1127 | 5.7500E+00 yrs |
| 63 | 911.07 | Ra-228 | 65 | NET | 0.2580 | 5.7500E+00 yrs |
| 65 | 968.90 | Ra-228 | 25 | QUANT | 0.1580 | 5.7500E+00 yrs |
| 41 | 621.84 | Ru-106 | 70 | NET | 0.0981 | 3.6820E+02 dys |
| 70 | 1050.47 | Ru-106 | 41 | QUANT | 0.0173 | 3.6820E+02 dys |
| 37 | 602.71 | Sb-124 | 42 | NET | 0.9826 | 6.0200E+01 dys |
| 42 | 645.84 | Sb-124 | 49 | QUANT | 0.0745 | 6.0200E+01 dys |
| 49 | 713.82 | Sb-124 | 85 | QUANT | 0.0238 | 6.0200E+01 dys |
| 85 | 1368.21 | Sb-124 | 90 | QUANT | 0.0251 | 6.0200E+01 dys |
| 90 | 1691.04 | Sb-124 | 37 | QUANT | 0.4779 | 6.0200E+01 dys |
| 12 | 176.29 | Sb-125 | 29 | QUANT | 0.0682 | 2.7702E+00 yrs |
| 29 | 427.95 | Sb-125 | 30 | NET | 0.3000 | 2.7702E+00 yrs |
| 30 | 463.51 | Sb-125 | 36 | QUANT | 0.1049 | 2.7702E+00 yrs |
| 36 | 600.77 | Sb-125 | 39 | QUANT | 0.1786 | 2.7702E+00 yrs |
| 39 | 606.82 | Sb-125 | 12 | QUANT | 0.0502 | 2.7702E+00 yrs |
| 62 | 889.26 | Sc-46 | 0 | NET | 0.9998 | 8.3850E+01 dys |
| 16 | 236.00 | Th-227 | 0 | NET | 0.1230 | 2.1700E+01 yrs |
| 2 | 63.29 | Th-234 | 3 | QUANT | 0.0390 | 4.4680E+09 yrs |
| 3 | 92.50 | Th-234 | 2 | NET | 0.0553 | 4.4680E+09 yrs |
| 19 | 277.36 | Tl-208 | 34 | QUANT | 0.0631 | 1.4500E+10 yrs |
| 34 | 583.14 | Tl-208 | 59 | NET | 0.8450 | 1.4500E+10 yrs |
| 59 | 860.47 | Tl-208 | 19 | QUANT | 0.1242 | 1.4500E+10 yrs |
| 9 | 143.76 | U-235 | 10 | NET | 0.1096 | 7.0379E+08 yrs |
| 10 | 163.35 | U-235 | 13 | QUANT | 0.0508 | 7.0379E+08 yrs |
| 13 | 185.72 | U-235 | 15 | ID | 0.5720 | 7.0379E+08 yrs |
| 15 | 205.31 | U-235 | 9 | QUANT | 0.0501 | 7.0379E+08 yrs |
| 74 | 1115.52 | Zn-65 | 0 | NET | 0.5060 | 2.4380E+02 dys |

PARAGON ANALYTICS
Radiochemistry Data Package

Section 5

QUALITY ASSURANCE
SUMMARY REPORTS

5

000363

No *NON-COMFORMANCE REPORTS* or
QUALITY ASSURANCE SUMMARY SHEETS
are included in this data package.

PARAGON ANALYTICS
Radiochemistry Data Package

Section 6

**LABORATORY
BENCH SHEETS**

6

Paragon Analytics

Radiochemistry Instrument Worksheet

Prep Batch: GS0407202

Prep Procedure: GAMMASCAN

| Prep Num | Lab ID | QC Collection Date | QC Type | Init Alq | Fin Alq | Units | Cnt 1 File | Cnt 1 Inst/Det | Cnt 1 Count Date | Cnt 2 File | Cnt 2 Inst/Det | Cnt 2 Count Date | Cnt 3 File | Cnt 3 Inst/Det | Cnt 3 Count Date | Notes |
|----------|------------|--------------------|---------|----------|---------|-------|------------|----------------|------------------|------------|----------------|------------------|------------|----------------|------------------|-------|
| 1 | 0405096-6 | 05/07/04 08:30 | SMP | 382.9 | 382.9 | 9 | 30 | 8 | 7-20-04 | | | | | | | |
| 1 | 0405096-6 | 05/07/04 08:30 | DUP | 388.5 | 388.5 | 9 | 1 | 1 | | | | | | | | |
| 1 | GS040720-2 | 07/20/04 13:53 | MB | 500 | 500 | 9 | 120 | 8 | 7/21/04 | | | | | | | |
| 1 | GS040720-2 | 07/20/04 13:53 | LCS | 500 | 500 | 9 | 30 | 8 | | | | | | | | |

| Spike Solution Information | | | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|---------------|----------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date | Aliquot Units | Pipet ID |
| S1 | AM-241 | 677 | 469.636 | DPM/g | 07/20/04 | 500 | 9 |
| S1 | CO-60 | 677 | 262.543 | DPM/g | 07/20/04 | 500 | 9 |
| S1 | CS-137 | 677 | 189.753 | DPM/g | 07/20/04 | 500 | 9 |

000360

Paragon Analytics

Radiochemistry Prep Worksheet

Prep Procedure: GAMMASCAN

Non-Routine Pre-Treatment? Y / N Batch: N/A
Prep SOP: PAI 739 Rev: 8
Prep SOP: NONE
Matrix Class: solid

Reviewed By: CXO C. O. - 7/20/04
Review Date: 7/20/04

Re-Prep? Y / N Batch: N/A
Prep Analyst: Carson Odell C. O. - 7/20/04

Prep Date: 7/20/04
Prep Dept: GM

| Samp Num | Prep Num | LabID | QC Type | Dish No. | Init Alq g | Fin Alq g | Prep Basis | Geometry | Standards | Prep Notes |
|----------|----------|------------|---------|----------|------------|-----------|------------|----------|-----------|------------|
| 1 | 1 | 0405096-6 | SMP | 382.9 | 382.9 | | Dry Weight | 13 | | |
| 2 | 1 | 0405096-6 | DUP | 388.5 | 388.5 | | Dry Weight | 13 | | |
| 3 | 1 | GSO40720-2 | MB | 500 | 500 | | Dry Weight | 13 | | |
| 4 | 1 | GSO40720-2 | LCS | 500 | 500 | | Dry Weight | 13 | | |

Spiked By: N/A Date: N/A
Witnessed By: N/A Date: N/A

Received By: C. O.
Date: 7/20/04

| Spike Spallation Information | | | | | | | | | |
|------------------------------|---------|--------|-----------|-------|-----------|---------|-------|----------|--|
| Soin # | Nuclide | SoinID | Prep Conc | Units | Prep Date | Aliquot | Units | Pipet ID | |
| S1 | AM-241 | 677 | 469.636 | DPM/g | 07/20/04 | 500 | g | | |
| S1 | CO-60 | 677 | 262.543 | DPM/g | 07/20/04 | 500 | g | | |
| S1 | CS-137 | 677 | 189.733 | DPM/g | 07/20/04 | 500 | g | | |

Comments

00037)

Paragon Analytics**Radiochemistry Prep Worksheet**

Prep Procedure: GAMMASCAN

Prep Batch Not Validated!!!

Reviewed By: _____

Non-Routine Pre-Treatment? Y / N Batch: _____

Re-Prep? Y / N Batch: _____

Prep QASS / NCR? Y / N _____

Prep SOP: PAI 739

Rev: 8

Prep SOP: NONE

Matrix Class: solid

Prep Analyst: Carson Odell

Prep Date: 7/20/04

Prep Dept: GM

| Samp Num | Prep Num | LabID | QC | Dish Type | No. | Init Atq g | Fin Atq g | Prep Basis | Geometry | Standards | Prep Notes |
|----------|----------|------------|-----|-----------|-------|------------|-----------|------------|----------|-----------|------------|
| 1 | 1 | 0405096-6 | SMP | | 382.9 | 382.9 | | Dry Weight | 13 | | |
| 2 | 1 | 0405096-6 | DUP | | 388.5 | 388.5 | | Dry Weight | 13 | | |
| 3 | 1 | GS040720-2 | MB | | 500 | 500 | | Dry Weight | 13 | | |
| 4 | 1 | GS040720-2 | LCS | | 500 | 500 | | Dry Weight | 13 | S1 | |

Spiked By: N/A Date: N/A _____

Witnessed By: N/A Date: N/A _____

DRAFT

Relinquished By: _____

Date: _____

| Spike Solution Information | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date |
| S1 | AM-241 | 677 | 469.656 | DPM/g | 07/20/04 |
| S1 | CO-60 | 677 | 262.543 | DPM/g | 07/20/04 |
| S1 | CS-137 | 677 | 189.793 | DPM/g | 07/20/04 |

Received By: _____

Date: _____

Comments _____

Gamma Spectroscopy Prep Worksheet

Batch ID: 04-05-096

Analyst: C.O.

Prep. Date: 7/20/04

SOP: 739 R&B

Top Load Balance No: 15

Oven No: N/A

Date/Time In Oven: N/A

Date/Time Out Oven: -

Math Checked: C.O.

| Work Order Number | Sample Number | Client Sample ID | Collection Date | Sample + Jar (G) | Jar (G) | Sample Aliquot (G) | Geometry | Remarks |
|-------------------|---------------|------------------|-----------------|------------------|---------|--------------------|----------|---------|
| 1 | 04-05-096 | B1 | Blank | N/A | N/A | See Average | | |
| 2 | " dup | 6 | See Work Order | 432.7 | 49.8 | 382.9 | 1/3 | |
| 3 | | " | | 437.6 | 49.1 | 388.5 | 1/3 | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| 21 | | | | | | | | |
| 22 | | | | | | | | |

| | | | | | | |
|----|---|-------|------|-------|-----|---------------------------|
| 1 | 6 | 432.7 | 49.8 | 382.9 | 1/3 | Samp & rec'd dry & ground |
| 2 | 6 | 437.6 | 49.1 | 388.5 | 1/3 | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
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| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
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| 22 | | | | | | |

000372

10/24/01.....6:16 PM

R/BENCH-SH/PREPWS.XLS

Radiochemistry Instrument Worksheet

Prop Batch: ESO040801-6

GAMMASCAN

Prep Procedure: GAMMASCAN

Analytical QASS / NCR? Y N

| Prep Num | Lab ID | QC Type | Init Alq | Fin Alq | Units | Cnt 1 File Cnt Dur (min) | Cnt 1 Inst/Det Count Date | Cnt 2 File Cnt Dur (min) | Cnt 2 Inst/Det Count Date | Cnt 3 File Cnt Dur (min) | Cnt 3 Inst/Det Count Date | Notes |
|----------|----------------|---------|----------|---------|-------|--------------------------|---------------------------|--------------------------|---------------------------|--------------------------|---------------------------|-----------|
| 1 | 0405096-1 | SMP | 55.2 | 55.2 | g | 11.4 | | 627.04 | | 1000 | 10.04 | * * COUNT |
| | 05/06/04 13:00 | SMP | 69.3 | 69.3 | g | 11.3 | | 1 | 4 | 1 | 1000 | 10.04 |
| 1 | 0405096-3 | SMP | 69.3 | 69.3 | g | 11.3 | | 3 | | | | |
| 1 | 05/06/04 14:00 | SMP | 37.3 | 37.3 | g | 11.3 | | | | | | |
| 1 | 0405096-7 | SMP | 37.3 | 37.3 | g | 11.3 | | | | | | |
| 1 | 05/07/04 09:00 | SMP | 109.9 | 109.9 | g | 30 | | 4 | 627.04 | | | |
| 1 | 0405096-8 | SMP | 109.9 | 109.9 | g | 30 | | 7 | 627.04 | | | |
| 1 | 05/07/04 09:15 | SMP | 33 | 33 | g | 11 | | 10 | 1 | | | |
| 1 | 0405096-9 | SMP | 33 | 33 | g | 11 | | 10 | 1 | | | |
| 1 | 05/07/04 09:20 | DUP | 101.8 | 101.8 | g | 11 | | 10 | 1 | | | |
| 1 | 0405096-10 | SMP | 94.3 | 94.3 | g | 30 | | 4 | 627.04 | | | |
| 1 | 05/07/04 10:10 | SMP | 101 | 101 | g | 11 | | 7 | 627.04 | | | |
| 1 | 0405096-11 | SMP | 101 | 101 | g | 11 | | 7 | 627.04 | | | |
| 1 | 05/05/04 16:15 | DUP | 101.8 | 101.8 | g | 11 | | 10 | 1 | | | |
| 1 | 0405096-11 | DUP | 101.8 | 101.8 | g | 11 | | 10 | 1 | | | |
| 1 | 05/05/04 16:15 | SMP | 118.2 | 118.2 | g | 11.4 | | 4 | 1000 | 7 | 7.04 | |
| 1 | 0405096-12 | SMP | 118.2 | 118.2 | g | 11.4 | | 4 | 1000 | 7 | 7.04 | |
| 1 | 05/05/04 17:05 | DUP | 104.9 | 104.9 | g | 11.3 | | 7 | 1 | 3 | 1 | |
| 1 | 0405096-12 | DUP | 104.9 | 104.9 | g | 11.3 | | 7 | 1 | 3 | 1 | |
| 1 | 05/05/04 17:05 | SMP | 104 | 104 | g | 11 | | 10 | 627.04 | | | |
| 1 | 0405096-15 | SMP | 104 | 104 | g | 11 | | 10 | 627.04 | | | |
| 1 | 05/04/04 15:59 | SMP | 104.5 | 104.5 | g | 11 | | 10 | 627.04 | | | |
| 1 | 0405096-16 | SMP | 104.5 | 104.5 | g | 11 | | 10 | 627.04 | | | |
| 1 | 05/04/04 15:03 | SMP | 116.2 | 116.2 | g | 11 | | 10 | 627.04 | | | |
| 1 | 0405096-18 | SMP | 116.2 | 116.2 | g | 11 | | 10 | 627.04 | | | |
| 1 | 05/05/04 12:40 | SMP | 124.2 | 124.2 | g | 11 | | 10 | 627.04 | | | |
| 1 | 0405096-19 | SMP | 124.2 | 124.2 | g | 11 | | 10 | 627.04 | | | |
| 1 | 05/05/04 15:20 | SMP | 34.4 | 34.4 | g | 11 | | 2 | 711.04 | | | |
| 1 | 0405096-25 | SMP | 34.4 | 34.4 | g | 11 | | 10 | 711.04 | | | |
| 1 | 05/06/04 16:00 | SMP | 32.1 | 32.1 | g | 11 | | 10 | 711.04 | | | |
| 1 | 0405096-26 | SMP | 32.1 | 32.1 | g | 11 | | 10 | 711.04 | | | |
| 1 | 05/06/04 15:40 | SMP | 54.5 | 54.5 | g | 11 | | 4 | 7.04 | | | |
| 1 | 0405096-27 | SMP | 54.5 | 54.5 | g | 11 | | 3 | 7.04 | | | |
| 1 | 05/06/04 15:04 | MB | 100 | 100 | g | 11 | | 7 | 7.04 | | | |
| 1 | 0405096-28 | SMP | 48.1 | 48.1 | g | 11 | | 7 | 7.04 | | | |
| 1 | 05/06/04 15:10 | SMP | 34.4 | 34.4 | g | 11 | | 7 | 7.04 | | | |
| 1 | 0405096-30 | SMP | 45.8 | 45.8 | g | 11 | | 4 | 7.04 | | | |
| 1 | 05/07/04 16:15 | SMP | 1000 | 1000 | g | 11 | | 4 | 7.04 | | | |
| 1 | GS040601-6 | MB | 100 | 100 | g | 11 | | 7 | 7.04 | | | |
| 1 | 05/06/04 16:42 | LCS | 100 | 100 | g | 11 | | 7 | 7.04 | | | |
| 1 | 05/07/04 16:42 | LCS | 100 | 100 | g | 11 | | 7 | 7.04 | | | |

| Spike Solution Information | | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|---------------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date | Aliquot Units |
| S1 | AM-241 | 589 | 2,237.467 | DPM/g | 06/01/04 | 100 g |
| S1 | CD-109 | 589 | 6,322.611 | DPM/g | 06/01/04 | 100 g |
| S1 | CO-60 | 589 | 968.680 | DPM/g | 06/01/04 | 100 g |
| S1 | CS-137 | 589 | 794.127 | DPM/g | 06/01/04 | 100 g |

| Spike Solution Information | | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|---------------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date | Aliquot Units |
| S1 | AM-241 | 589 | 2,237.467 | DPM/g | 06/01/04 | 100 g |
| S1 | CD-109 | 589 | 6,322.611 | DPM/g | 06/01/04 | 100 g |
| S1 | CO-60 | 589 | 968.680 | DPM/g | 06/01/04 | 100 g |
| S1 | CS-137 | 589 | 794.127 | DPM/g | 06/01/04 | 100 g |

*FE COUNT ON HIGHER EFF. DETECTED TO TR AND WIT MDC. MC 2/4/04

12

Paragon Analytics

LIMS Version: 5
aragon An

Paragon Analytics

Radiochemistry Prep Worksheet

Prep Procedure: GAMMASCAN

Non-Routine Pre-Treatment? Y (N) Batch: N/A
 Prep SOP: PAI 739 Rev: 8
 Prep SOP: NONE
 Matrix Class: solid

| Prep Procedure: GAMMASCAN | | | | | | | | | | | |
|---------------------------------------|--|--|--|----------------------------|--|--|--|--|--|--|--|
| Non-Routine Pre-Treatment? Y (N) | | | | Batch: N/A | | | | | | | |
| Re-Prep? Y (N) | | | | Batch: N/A | | | | | | | |
| Prep Analyst: Grace Campagnola | | | | Review Date: 6/1/04 | | | | | | | |
| Prep Date: 6/1/04 | | | | Prep QASS / NCR? Y (N) N/A | | | | | | | |
| Prep Dept: GM | | | | Review Date: 6/1/04 | | | | | | | |
| Prep Notes | | | | | | | | | | | |
| Insufficient sample volume for GEO-13 | | | | | | | | | | | |

| Samp Num | Prep LabID | QC Type | Dish No. | Init Alq g | Fin Alq g | Prep Basis | Geometry | Standards |
|----------|------------|---------|----------|------------|-----------|------------|----------|-----------|
| 1 1 | 0405096-1 | SMP | | 55.2 | 55.2 | Dry Weight | 11 | |
| 2 1 | 0405096-3 | SMP | | 69.3 | 69.3 | Dry Weight | 11 | |
| 3 1 | 0405096-7 | SMP | | 37.3 | 37.3 | Dry Weight | 11 | |
| 4 1 | 0405096-3 | SMP | | 109.9 | 109.9 | Dry Weight | 11 | |
| 5 1 | 0405096-9 | SMP | | 33 | 33 | Dry Weight | 11 | |
| 6 1 | 0405096-10 | SMP | | 94.3 | 94.3 | Dry Weight | 11 | |
| 7 1 | 0405096-11 | SMP | | 101 | 101 | Dry Weight | 11 | |
| 8 1 | 0405096-11 | DUP | | 101.8 | 101.8 | Dry Weight | 11 | |
| 9 1 | 0405096-12 | SMP | | 118.2 | 118.2 | Dry Weight | 11 | |
| 10 1 | 0405096-12 | DUP | | 104.9 | 104.9 | Dry Weight | 11 | |
| 11 1 | 0405096-15 | SMP | | 104 | 104 | Dry Weight | 11 | |
| 12 1 | 0405096-16 | SMP | | 104.5 | 104.5 | Dry Weight | 11 | |
| 13 1 | 0405096-18 | SMP | | 116.2 | 116.2 | Dry Weight | 11 | |
| 14 1 | 0405096-19 | SMP | | 124.2 | 124.2 | Dry Weight | 11 | |
| 15 1 | 0405096-25 | SMP | | 34.4 | 34.4 | Dry Weight | 11 | |
| 16 1 | 0405096-26 | SMP | | 32.1 | 32.1 | Dry Weight | 11 | |
| 17 1 | 0405096-27 | SMP | | 54.5 | 54.5 | Dry Weight | 11 | |
| 18 1 | 0405096-28 | SMP | | 48.1 | 48.1 | Dry Weight | 11 | |
| 19 1 | 0405096-30 | SMP | | 45.8 | 45.8 | Dry Weight | 11 | |
| 20 1 | GS040601-6 | MB | | 100 | 100 | Dry Weight | 11 | |
| 21 1 | GS040601-6 | LCS | | 100 | 100 | Dry Weight | 11 | |

Spiked By: N/A Date: N/A
 Witnessed By: N/A Date: N/A

| Spikes/Solutions Information | | | | | | | |
|------------------------------|---------|--------|-----------|-------|-----------|---------|-------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date | Aliquot | Units |
| S1 | AM-241 | 589 | 2,237.467 | DPM/g | 06/01/04 | 100 | g |
| S1 | CD-109 | 589 | 6,322.611 | DPM/g | 06/01/04 | 100 | g |
| S1 | CO-60 | 589 | 968.680 | DPM/g | 06/01/04 | 100 | g |
| S1 | CS-137 | 589 | 794.127 | DPM/g | 06/01/04 | 100 | g |

Relinquished By: gxc Date: 6/1/04
 Received By: MC Date: 6/1/04

Comments:

Gamma Spectroscopy Prep Worksheet

Batch ID: 04-05-090
 Analyst: JL CO
 Prep Date: 6/1/04
 SOP: 739 RPS

Top Load Balance No: 15 · Math Checked: JLC
 Oven No: 1

Date/Time In Oven: 5/8/04 @ 1740
 Date/Time Out Oven: 6/1/04 @ 1430

| Work Order Number | Sample Number | Client Sample ID | Collection Date | Sample + Jar (G) | Jar (G) | Sample Aliquot (G) | Geometry | Remarks |
|-------------------|---------------|------------------|-----------------|------------------|---------|--------------------|----------|----------------------|
| 1 | B1 | Blank | | N/A | N/A | See Average | | |
| 1 | 0405096 | 1 | See Work Order | 104.7 | 49.5 | 55.8 | 11 | In sufficient volume |
| 2 | 3 | | | 118.7 | 118.4 | 69.3 | | for 6700 1.3 |
| 3 | 7 | | | 86.5 | 49.4 | 37.3 | | |
| 4 | 8 | | | 159.2 | 80.3 | 109.9 | | |
| 5 | 9 | | | 82.8 | 49.8 | 33.0 | | |
| 6 | 10 | | | 143.7 | 49.4 | 94.3 | | |
| 7 | 11 | | | 151.0 | 50.0 | 101.0 | | |
| 8 | 11-D | | | 152.0 | 50.8 | 101.8 | | |
| 9 | 12 | | | 163.5 | 49.3 | 118.3 | | |
| 10 | 13-D | | | 154.6 | 49.7 | 104.9 | | |
| 11 | 15 | | | 153.4 | 49.4 | 104.0 | | |
| 12 | 16 | | | 154.0 | 49.5 | 104.5 | | |
| 13 | 18 | | | 165.6 | 49.4 | 116.7 | | |
| 14 | 19 | | | 174.1 | 49.9 | 124.3 | | |
| 15 | 21 | | | 133.0 | 49.9 | 83.1 | | |
| 16 | 23 | | | 124.7 | 49.8 | 75.5 | | |
| 17 | 24 | | | 134.8 | 50.1 | 81.7 | | |
| 18 | 25 | | | 841.8 | 49.8 | 34.4 | | |
| 19 | 24 | | | 81.2 | 49.1 | 32.1 | | |
| 20 | 27 | | | 103.8 | 49.3 | 54.5 | | |
| 21 | 28 | | | 97.3 | 49.3 | 48.1 | | |
| 22 | 30 | | | 96.1 | 50.3 | 45.8 | | |

000375

Paragon Analytics

Radiochemistry Instrument Worksheet

Prep Batch: GS040601-7

Prep Procedure: GAMMASCAN

| Prep Num | Lab ID Date | QC Type | Init Alq | Fin Alq | Units Geo. | Cnt 1 File Cnt Dur (min) | Cnt 1 Inst/Det | Cnt 1 Count Date | Analytical QASS / NCR? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> | | | |
|----------|------------------------------|---------|----------|---------|------------|--------------------------|----------------|------------------|---|----------------|------------------|--------------------------|
| | | | | | | | | | Cnt 2 File Cnt Dur (min) | Cnt 2 Inst/Det | Cnt 2 Count Date | Cnt 3 File Cnt Dur (min) |
| 1 | 0405096-2 05/06/04 13:40 | SMP | 222.9 | 222.9 | g | 600 | 1 | 6-26-04 | | | | |
| 1 | 0405096-4 05/06/04 09:10 | SMP | 407.2 | 407.2 | g | 13 | 1 | | | | | |
| 1 | 0405096-5 05/06/04 09:20 | SMP | 342.4 | 342.4 | g | 30 | 2 | | | | | |
| 1 | 0405096-13 05/04/04 18:10 | SMP | 409.6 | 409.6 | g | 13 | 1 | | | | | |
| 1 | 0405096-13 05/04/04 18:10 | DUP | 409.6 | 409.6 | g | 13 | 1 | | | | | |
| 1 | 0405096-14 05/04/04 17:00 | SMP | 431.1 | 431.1 | g | 13 | 1 | | | | | |
| 1 | 0405096-17 05/04/04 14:00 | SMP | 399.6 | 399.6 | g | 13 | 1 | | | | | |
| 1 | 0405096-20 05/04/04 19:05 | SMP | 417.1 | 417.1 | g | 13 | 1 | | | | | |
| 1 | 0405096-22 05/07/04 12:35 | SMP | 331.4 | 331.4 | g | 13 | 1 | | | | | |
| 1 | 0405096-29 05/07/04 14:10 | SMP | 384.7 | 384.7 | g | 13 | 1 | | | | | |
| 1 | 0405096-31 05/07/04 14:10 | SMP | 371.6 | 371.6 | g | 13 | 1 | | | | | |
| 1 | 0405096-31 05/07/04 14:10 | DUP | 371.6 | 371.6 | g | 13 | 1 | | | | | |
| 1 | 0405096-32 05/07/04 16:40 | SMP | 341.7 | 341.7 | g | 13 | 1 | | | | | |
| 1 | GS040601-7 06/01/04 17:10 | MB | 500 | 500 | g | 600 | 2 | | | | | |
| 1 | GS040601-7 06/01/04 17:10 | LCs | 500 | 500 | g | 30 | 2 | 6-28-04 | | | | |

| Spike Solution Information | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date |
| S1 | AM-241 | 677 | 469.757 | DPM/g | 06/01/04 |
| S1 | CO-60 | 677 | 267.203 | DPM/g | 06/01/04 |
| S1 | CS-137 | 677 | 190.378 | DPM/g | 06/01/04 |

00037

6/9

Paragon Analytics

Radiochemistry Instrument Worksheet

Prep Batch: GS040601-7

Prep Procedure: GAMMASCAN

| Prep Num | Lab ID | QC Collection Date | Init Atq Type | Fin Atq | Units | Cnt 1 File | Cnt 1 Inst/Det | Cnt 2 File | Cnt 2 Inst/Det | Cnt 3 File | Cnt 3 Inst/Det | Analytical QASS / NCR? Y / N | | Notes | | |
|----------|------------|--------------------|---------------|---------|-------|------------|----------------|------------|----------------|------------|----------------|------------------------------|------------|---------------|------------|----------------------------|
| | | | | | | | | | | | | Cnt Dur (min) | Count Date | Cnt Dur (min) | Count Date | |
| 1 | 0405096-2 | 05/06/04 13:40 | SMP | 222.9 | g | MC 6/23/04 | 8 | 6/25/04 | 31600 | 6/24/04 | | | | | | * + Recount to hit 6/23/04 |
| 1 | 0405096-4 | 05/06/04 08:10 | SMP | 407.2 | 407.2 | 7/20 | 2 | 6/24/04 | 31600 | 2 | | | | | | |
| 1 | 0405096-5 | 05/06/04 08:20 | SMP | 342.4 | 342.4 | 8 | 1 | 8 | | | | | | | | |
| 1 | 0405096-13 | 05/04/04 18:10 | SMP | 409.6 | 409.6 | 3/3 | 3 | | | | | | | | | |
| 1 | 0405096-13 | 05/04/04 18:10 | DUP | 409.6 | 409.6 | 2 | 2 | | | | | | | | | CT DUP |
| 1 | 0405096-14 | 05/04/04 18:10 | SMP | 431.1 | 431.1 | 5/2 | 3 | | | | | | | | | |
| 1 | 0405096-17 | 05/04/04 17:00 | SMP | 398.6 | 399.6 | 9 | 8 | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 1 | 0405096-20 | 05/04/04 14:00 | SMP | 417.1 | 417.1 | 9 | 30 | | | | | | | | | |
| 1 | 0405096-20 | 05/04/04 19:05 | SMP | 417.1 | 417.1 | 13 | 2 | | | | | | | | | |
| 1 | 0405096-22 | 05/07/04 12:35 | SMP | 331.4 | 331.4 | 9 | 3 | | | | | | | | | |
| 1 | 0405096-29 | 05/07/04 13:50 | SMP | 384.7 | 384.7 | 9 | 2 | | | | | | | | | |
| 1 | 0405096-31 | 05/07/04 14:10 | SMP | 371.6 | 371.6 | 13 | 8 | | | | | | | | | |
| 1 | 0405096-31 | 05/07/04 14:10 | DUP | 371.6 | 371.6 | 9 | 3 | | | | | | | | | DRAFT |
| 1 | 0405096-32 | 05/07/04 15:40 | SMP | 341.7 | 341.7 | 9 | 8 | | | | | | | | | CT DUP |
| 1 | GS040601-7 | 06/01/04 17:10 | MB | 222.9 | 222.9 | 6/00 | 3 | | | | | | | | | |
| 1 | GS040601-7 | 06/01/04 17:10 | LCS | 222.9 | 222.9 | 9 | 30 | 8 | 8 | 30 | 2 | 6/28/04 | | | | |
| | | | | | | | | | | | | | | | | |

| Spike Solution Information | | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|---------------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date | Aliquot Units |
| S1 | AM-241 | 582 | 434.665 | DPM/g | 06/01/04 | 500 9 |
| S1 | CD-109 | 582 | 1,100.962 | DPM/g | 06/01/04 | 500 9 |
| S1 | CO-60 | 582 | 183.108 | DPM/g | 06/01/04 | 500 9 |
| S1 | CS-137 | 582 | 174.695 | DPM/g | 06/01/04 | 500 9 |

* K's S AND + P-231 LIBRARY
 * LCS EXPIRED (#582) MC 6/28/04
 MC 6/29/04

Paragon Analytics

Radiochemistry Prep Worksheet

Prep Batch: GS040601-7

Prep Procedure: GAMMASCAN

Non-Routine Pre-Treatment? Y / N

Batch: _____ Reviewed By: mbc Review Date: 7/6/2004

Prep SOP: PAI 739 Rev: 8

Prep SOP: NONE

Matrix Class: solid

Prep Analyst: Carson Odell
Prep Date: 6/1/2004
Prep Dept: GM

| Samp Num | Prep Num | LabID | QC Type | Dish No. | Init Aiq g | Fin Aiq g | Prep Basis | Geometry | Standards | Prep Notes |
|----------|----------|-------|---------|----------|------------|-----------|------------|----------|-----------|------------|
|----------|----------|-------|---------|----------|------------|-----------|------------|----------|-----------|------------|

| | | | | | | | | | | |
|----|---|------------|-----|-------|-------|------------|----|-----|--|------------------------------------|
| 1 | 1 | 0405096-2 | SMP | 222.9 | 222.9 | Dry Weight | 13 | | | Insufficient volume for sample DUP |
| 2 | 1 | 0405096-4 | SMP | 407.2 | 407.2 | Dry Weight | 13 | | | |
| 3 | 1 | 0405096-5 | SMP | 342.4 | 342.4 | Dry Weight | 13 | | | |
| 4 | 1 | 0405096-13 | SMP | 409.6 | 409.6 | Dry Weight | 13 | | | |
| 5 | 1 | 0405096-13 | DUP | 409.6 | 409.6 | Dry Weight | 13 | | | |
| 6 | 1 | 0405096-14 | SMP | 431.1 | 431.1 | Dry Weight | 13 | | | |
| 7 | 1 | 0405096-17 | SMP | 399.6 | 399.6 | Dry Weight | 13 | | | |
| 8 | 1 | 0405096-20 | SMP | 417.1 | 417.1 | Dry Weight | 13 | | | |
| 9 | 1 | 0405096-22 | SMP | 331.4 | 331.4 | Dry Weight | 13 | | | |
| 10 | 1 | 0405096-29 | SMP | 384.7 | 384.7 | Dry Weight | 13 | | | |
| 11 | 1 | 0405096-31 | SMP | 371.6 | 371.6 | Dry Weight | 13 | | | |
| 12 | 1 | 0405096-31 | DUP | 371.6 | 371.6 | Dry Weight | 13 | | | |
| 13 | 1 | 0405096-32 | SMP | 341.7 | 341.7 | Dry Weight | 13 | | | |
| 14 | 1 | GS040601-7 | MB | 500 | 500 | Dry Weight | 13 | | | |
| 15 | 1 | GS040601-7 | LCS | 500 | 500 | Dry Weight | 13 | \$1 | | |

Spiked By: N/A Date: N/A

Witnessed By: N/A Date: N/A

Relinquished By: SBE Date: 7/6/2004

Received By: DRS Date: 7/6/2004

| Spike Solution Information | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date |
| S1 | AM-241 | 677 | 469.757 | DPM/g | 06/01/04 |
| S1 | CO-60 | 677 | 267.203 | DPM/g | 06/01/04 |
| S1 | CS-137 | 677 | 190.378 | DPM/g | 06/01/04 |

Comments

Page 1 of 1 GAMMASCAN Bench Sheet

Date Printed: 7/6/2004 11:41

Paragon Analytics
LIMS Version: 5.038A

Supersedes: 07/04 17:38

00037

Paragon Analytics

Radiochemistry Prep Worksheet

Prep Procedure: GAMMASCAN

| | | | | | |
|---|------------------|---|-------------------|---|-----------------------------------|
| Non-Routine Pre-Treatment? Y <input checked="" type="radio"/> N <input type="radio"/> | Batch: <u>AJ</u> | Re-Prep? Y <input checked="" type="radio"/> N <input type="radio"/> | Batch: <u>N/A</u> | Reviewed By: gxc <u>AC</u> | Review Date: 6/1/04 <u>6/1/04</u> |
| Prep SOP: PA1739 | Rev: 8 | Prep Analyst: Carson Odell | C, B, ~C, /I/04 | Prep QASS / NCR? Y <input checked="" type="radio"/> N <input type="radio"/> | Superseded: <u>N/A</u> |
| Prep SOP: NONE | | Prep Date: 6/1/04 | Balance: 15 | | |
| Matrix Class: solid | | Prep Dept: GM | Balance: | | |

| Samp Num | Prep Num | LabID | QC Type | Dish No. | Init Alq g | Fin Alq g | Prep Basis | Geometry | Standards | Prep Notes |
|----------|----------|------------|---------|----------|------------|-----------|------------|----------|-----------|------------------------------------|
| 1 | 1 | 0405096-2 | SMP | 222.9 | 222.9 | 222.9 | Dry Weight | 13 | | Insufficient volume for sample DUP |
| 2 | 1 | 0405096-4 | SMP | 407.2 | 407.2 | 407.2 | Dry Weight | 13 | | |
| 3 | 1 | 0405096-5 | SMP | 342.4 | 342.4 | 342.4 | Dry Weight | 13 | | |
| 4 | 1 | 0405096-13 | SMP | 409.6 | 409.6 | 409.6 | Dry Weight | 13 | | |
| 5 | 1 | 0405096-13 | DUP | 409.6 | 409.6 | 409.6 | Dry Weight | 13 | | |
| 6 | 1 | 0405096-14 | SMP | 431.1 | 431.1 | 431.1 | Dry Weight | 13 | | |
| 7 | 1 | 0405096-17 | SMP | 399.6 | 399.6 | 399.6 | Dry Weight | 13 | | |
| 8 | 1 | 0405096-20 | SMP | 417.1 | 417.1 | 417.1 | Dry Weight | 13 | | |
| 9 | 1 | 0405096-22 | SMP | 331.4 | 331.4 | 331.4 | Dry Weight | 13 | | |
| 10 | 1 | 0405096-29 | SMP | 384.7 | 384.7 | 384.7 | Dry Weight | 13 | | |
| 11 | 1 | 0405096-31 | SMP | 371.6 | 371.6 | 371.6 | Dry Weight | 13 | | |
| 12 | 1 | 0405096-31 | DUP | 371.6 | 371.6 | 371.6 | Dry Weight | 13 | | |
| 13 | 1 | 0405096-32 | SMP | 341.7 | 341.7 | 341.7 | Dry Weight | 13 | | |
| 14 | 1 | G5040601-7 | MB | 222.9 | 222.9 | 222.9 | Dry Weight | 13 | | |
| 15 | 1 | G5040601-7 | LOS | 222.9 | 222.9 | 222.9 | Dry Weight | 13 | | |

Spiked By: N/A Date: N/A
Witnessed By: N/A Date: N/A

Relinquished By: AC
Date: 6/1/04

Received By: MC
Date: 6/1/04

| Spike/Solution Information | | | | | | |
|----------------------------|---------|--------|-----------|-------|-----------|---------------|
| Soln # | Nuclide | SolnID | Prep Conc | Units | Prep Date | Aliquot Units |
| S1 | AM-241 | 582 | 434.65 | DPM/g | 06/01/04 | 500 |
| S1 | CD-109 | 582 | 1,100.962 | DPM/g | 06/01/04 | 500 |
| S1 | CO-60 | 582 | 183.108 | DPM/g | 06/01/04 | 500 |
| S1 | CS-137 | 582 | 174.655 | DPM/g | 06/01/04 | 500 |

Gamma Spectroscopy Prep Worksheet

Batch ID: Q405096
 Analyst: JAC CO
 Prep. Date: 6/1/04
 SOP: 739 R2B

Top Load Balance No: 15 Math Checked: JAC
 Oven No: 1
 Date/Time In Oven: 5/18/04 @ 1740
 Date/Time Out Oven: 6/1/04 @ 1430

| Work Order Number | Sample Number | Client Sample ID | Collection Date | Sample + Jar (G) | Jar (G) | Sample Aliquot (G) | Geometry | Remarks |
|-------------------|---------------|------------------|-----------------|------------------|---------|--------------------|----------|---------|
| 1 | B1 | Blank | | N/A | N/A | See Average | | |
| 0405096 | 2 | See Work Order | See Work Order | 471.6 | 48.7 | 322.9 | 13 | |
| 2 | 4 | | | 450.3 | 49.1 | 407.7 | | |
| 3 | 5 | | | 392.3 | 49.9 | 343.4 | | |
| 4 | 13 | | | 459.0 | 49.4 | 409.6 | | |
| 5 | 14 | | | 480.9 | 49.8 | 431.1 | | |
| 6 | 17 | | | 449.5 | 49.9 | 399.6 | | |
| 7 | 20 | | | 467.0 | 49.9 | 417.1 | | |
| 8 | 22 | | | 380.9 | 49.5 | 331.4 | | |
| 9 | 29 | | | 434.3 | 49.6 | 384.7 | | |
| 10 | 31 | | | 420.9 | 49.3 | 371.6 | | |
| 11 | 32 | | | 391.1 | 49.4 | 341.7 | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| 21 | | | | | | | | |

003

10/24/01.....6:16 PM

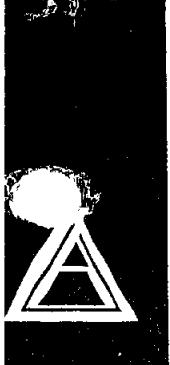
PARAGON ANALYTICS
Radiochemistry Data Package

Section 7

**STANDARDS
TRACEABILITY
DOCUMENTS**

7

ANALYTICS



1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

62272-307

PA I P O 589
recd 9-25-01

100 Grams of Sand in 16 Ounce PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: July 1, 2001 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | Y | 1345 |
| Cd-109 | 88 | 462.6 | d | 1881 |
| Co-57 | 122 | 271.79 | d | 1030 |
| Ce-139 | 166 | 137.6 | d | 1402 |
| Hg-203 | 279 | 46.61 | d | 2980 |
| Sn-113 | 392 | 115.1 | d | 1860 |
| Cs-137 | 662 | 30.07 | Y | 1205 |
| Y-88 | 898 | 106.6 | d | 4932 |
| Co-60 | 1173 | 5.271 | Y | 2360 |
| Co-60 | 1332 | 5.271 | Y | 2381 |
| Y-88 | 1836 | 106.6 | d | 5162 |

Approximately 62.5 mL of customer supplied sand.

P O NUMBER 0001675, Item 2

SOURCE PREPARED BY: M. Taskaeva
M. Taskaeva Radiochemist

Q A APPROVED: W.M. Mitz 9-19-01

This standard will expire one year after the calibration date.

000332

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY

BATCH 105 MIXED GAMMA STANDARDS WITH Am-241
CALIBRATION DATE: July 1, 2001 12:00 EST

| GAMMA RAY ENERGY (keV) | RANDOM ERROR % (99 % CL) | SYSTEMATIC ERROR % | TOTAL % |
|------------------------|----------------------------|--------------------|---------|
| 59.5 | 2.0 | 3.0 | 5.0 |
| 88 | 1.4 | 3.2 | 4.6 |
| 122 | 1.4 | 2.7 | 4.1 |
| 166 | 1.6 | 2.8 | 4.4 |
| 279 | 1.1 | 3.0 | 4.1 |
| 392 | 1.4 | 2.8 | 4.2 |
| 662 | 2.0 | 2.8 | 4.8 |
| 898 | 1.1 | 3.0 | 4.1 |
| 1173 | 2.2 | 2.8 | 5.0 |
| 1332 | 1.4 | 2.8 | 4.2 |
| 1836 | 1.6 | 3.0 | 4.6 |

The systematic error includes the error in calibration standards, weighing error, and estimated counting corrections. All uncertainties are stated at the 99% confidence level.

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (kev/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.



U.S. DEPARTMENT OF COMMERCE

National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 2001, through December 31, 2001, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed below.*

For the Director,

A handwritten signature in cursive script that appears to read "Lisa R. Karam".

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory

* As guidance for the proper use of Reports of Traceability, it should be emphasized that the National Institute of Standards and Technology is concerned only with fostering good measurements capability and consistency with the national measurements system. The assurance of the proper application of that capability to the ultimate consumer products is the responsibility of each manufacturer of these products and of the Federal regulatory agencies.

A continuing traceability program in radioactivity demonstrates, to the degree established by the periodic assays of calibrated radioactivity samples, a continuing competence to maintain the methods and standards necessary for accurate measurement. Such a program cannot, however, endorse each and every measurement nor the final product, any more than a spot check can vouch for every unchecked item. Care should be taken, therefore, not to imply such endorsement. The proper use of this Report is governed by section 200.114 of Title 15 of the Code of Federal Regulations. These regulations may be met if Reports are quoted only in their entirety. Excerpts on 000334

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

66010-307

PA 10 677
recd 4-30-03

500 Grams of Sand in 500 mL PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: April 1, 2003 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | 1408 | 3.0 |
| Cd-109 | 88 | 462.6 | 1974 | 3.3 |
| Co-57 | 122 | 271.79 | 1101 | 2.8 |
| Ce-139 | 166 | 137.6 | 1479 | 2.7 |
| Hg-203 | 279 | 46.61 | 3463 | 2.7 |
| Sn-113 | 392 | 115.1 | 2037 | 2.6 |
| Cs-137 | 662 | 30.07 | 1388 | 3.0 |
| Y-88 | 898 | 106.6 | 5310 | 2.6 |
| Co-60 | 1173 | 5.2714 | 2583 | 2.6 |
| Co-60 | 1332 | 5.2714 | 2612 | 2.6 |
| Y-88 | 1836 | 106.6 | 5550 | 2.6 |

290 mL of customer supplied sand.

P O NUMBER EW041003, Item 1

SOURCE PREPARED BY:

M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED:

W. M. Mct 4-29-03

This standard will expire one year after the calibration date.



ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 112

CALIBRATION DATE: APRIL 1, 2003 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD* | STATISTICS | CALIBRATION | PEAK FITTING | GEOMETRY | IMPURITIES | WEIGHING | COMBINED STANDARD UNCERTAINTY | RELATIVE EXPANDED UNCERTAINTY (K=2) |
|---------|-----------------|------------------------|------------|-------------|-----------------|----------|------------|----------|-------------------------------------|--|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.1 | 1.63 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 0.93 | 0.71 | 0.7 | 0 | 0.1 | 1.39 | 2.8 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.1 | 1.37 | 2.7 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.1 | 1.36 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.1 | 1.29 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.1 | 1.48 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.1 | 1.28 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.1 | 1.32 | 2.6 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.1 | 1.31 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.1 | 1.30 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.1 | 1.49 | 3.0 |
| Am-241 | 59.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.1 | 1.49 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.1 | 1.35 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |

*Calibration Methods:

4πLS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma-Ray Ionization Chamber)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

000336



U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)



ANALYTICS

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Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

SHIPPER'S DECLARATION

Shipment number 20080-11346 contains the following isotopes:

FORM: Solid

| <u>RADIOMUCLIDE</u> | <u>QUANTITY IN MICROCURIES*</u> |
|---------------------|---------------------------------|
| Cd-109 | 1.680 |
| Co-57 | 0.040 |
| Ce-139 | 0.057 |
| Hg-203 | 0.131 |
| Sn-113 | 0.097 |
| Cs-137 | 0.050 |
| Y-88 | 0.174 |
| Co-60 | 0.080 |
| Am-241 | 0.121 |
| TOTAL: | 2.430 |

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package-limited quantity of material, UN2910.

SHIPPED TO: Paragon Analytics

DATE: 4-29-03

TC Kasai

*Quantities stated are approximate and for shipping purposes only. For certified quantities see Certificate of Calibration for each radioactive standard.

000333



ANALYTICS

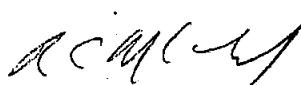
1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

MSDS

**IMPORTANT SAFETY INFORMATION
DO NOT DISCARD
PLEASE ROUTE TO COMPANY SAFETY OFFICER**

Be advised that radioactive materials are not included in the notification requirements of OSHA Hazard Communication Standard (29CFR1910.1200). This does not minimize the hazards and control requirements associated with radioactive materials, which are subject to various federal and state regulations.



Robert C. McFarland, RSO
Analytics, Inc.

PARAGON ANALYTICS
Radiochemistry Data Package

Section 8

CHAIN OF CUSTODY

8

000392

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0405096

Client Name: Kent & Sullivan Inc.

Client Project Name: Ross Adams

Client Project Number:

Client PO Number:

| Client Sample | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|---------------|-------------------|------------|--------|----------------|----------------|
| MSED-01 | 0405096-1 | | SOIL | 06-May-04 | 13:00 |
| MSED-02 | 0405096-2 | | SOIL | 06-May-04 | 13:40 |
| MSED-03 | 0405096-3 | | SOIL | 06-May-04 | 14:00 |
| MSED-04 | 0405096-4 | | SOIL | 06-May-04 | 9:10 |
| MSED-05 | 0405096-5 | | SOIL | 06-May-04 | 9:20 |
| MSED-06 | 0405096-6 | | SOIL | 07-May-04 | 8:30 |
| MSED-07 | 0405096-7 | | SOIL | 07-May-04 | 9:00 |
| MSED-08 | 0405096-8 | | SOIL | 07-May-04 | 9:15 |
| MSED-09 | 0405096-9 | | SOIL | 07-May-04 | 9:20 |
| MSED-10 | 0405096-10 | | SOIL | 07-May-04 | 10:10 |
| SSED-01 | 0405096-11 | | SOIL | 05-May-04 | 16:15 |
| SSED-02 | 0405096-12 | | SOIL | 05-May-04 | 17:05 |
| SSED-03 | 0405096-13 | | SOIL | 04-May-04 | 18:10 |
| SSED-04 | 0405096-14 | | SOIL | 04-May-04 | 17:00 |
| SSED-05 | 0405096-15 | | SOIL | 04-May-04 | 15:59 |
| SSED-06 | 0405096-16 | | SOIL | 04-May-04 | 15:03 |
| SSED-07 | 0405096-17 | | SOIL | 04-May-04 | 14:00 |
| SSED-08 | 0405096-18 | | SOIL | 05-May-04 | 12:40 |
| SSED-09 | 0405096-19 | | SOIL | 05-May-04 | 15:20 |
| SSED-10 | 0405096-20 | | SOIL | 04-May-04 | 19:05 |
| GEN-01 | 0405096-21 | | SOIL | 07-May-04 | 12:40 |
| GEN-02 | 0405096-22 | | SOIL | 07-May-04 | 12:35 |
| GEN-03 | 0405096-23 | | SOIL | 07-May-04 | 12:50 |
| GEN-04 | 0405096-24 | | SOIL | 07-May-04 | 13:06 |
| SOIL-01 | 0405096-25 | | SOIL | 06-May-04 | 16:00 |
| SOIL-02 | 0405096-26 | | SOIL | 06-May-04 | 15:40 |
| SOIL-04 | 0405096-27 | | SOIL | 06-May-04 | 15:04 |
| SOIL-05 | 0405096-28 | | SOIL | 06-May-04 | 15:10 |
| SOIL-07 | 0405096-29 | | SOIL | 07-May-04 | 13:50 |
| SOIL-08 | 0405096-30 | | SOIL | 07-May-04 | 16:15 |
| SOIL-09 | 0405096-31 | | SOIL | 07-May-04 | 14:10 |
| SOIL-10 | 0405096-32 | | SOIL | 07-May-04 | 16:40 |



Paragon Analytics, Inc.

225 Collierville Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1522 Fax (970) 490-1522

Chain-of-Custody Date _____ Page 3 of 9

Accession Number (LAB ID)

| Samplers: | | (circle one) Turnaround: Standard or Rush (Due _____) | | | Dispose or Return to Client | |
|---|--|---|--------|--------|-----------------------------|--------------------|
| | | Date | Time * | Lab ID | Matrix | No. of Contractors |
| Report To: | | 5/1/24 | 11:55 | 8 | Le | 3 |
| Phone: | | 5/1/24 | 11:20 | 9 | Le | 3 |
| Fax: | | 5/1/24 | 11:40 | 10 | Le | 2 |
| Company: | | 5/1/24 | 11:40 | 11 | Le | 3 |
| Address: | | 5/1/24 | 11:40 | 12 | Le | 3 |
| circle method or specify under comments | | | | | | |
| VOCs | | | | | | |
| SVOCs | | | | | | |
| OC Pesticides | | | | | | |
| PCBs | | | | | | |
| OP Pesticides | | | | | | |
| Herbicides | | | | | | |
| TCLP Organics | | | | | | |
| Total Metals | | | | | | |
| Dissolved Metals | | | | | | |
| Reactive CN / S | | | | | | |
| Hexavalent Chromium | | | | | | |
| Inorganic Anions ** | | | | | | |
| pH | | | | | | |
| TPH | | | | | | |
| TOX | | | | | | |
| Gross Alpha / Beta | | | | | | |
| Actinides by PAI SOP (circle) Pu / U / Am / Th / Cm | | | | | | |
| Tritium | | | | | | |
| Total Alpha-Emitting Radium | | | | | | |
| Strontium 89 D581195 Strontium 90 D581195 | | | | | | |
| Gamma Isotopes ** E9011 | | | | | | |
| Total Uranium by KEP-5517-91 | | | | | | |
| Tritium E9060 | | | | | | |
| Total Alpha-Emitting Radium SW9315 E9030 | | | | | | |
| Strontium 89 D581195 Strontium 90 D581195 | | | | | | |
| Gamma Isotopes ** E9011 | | | | | | |

| | |
|----------------------|---------------|
| (1) Received By: | |
| Signature | Printed Name |
| 5/1/24 | Time 11:40 AM |
| Company | Date 5/1/24 |
| (2) Relinquished By: | |
| Signature | Printed Name |
| 5/1/24 | Time 11:40 AM |
| Company | Date 5/1/24 |

* Time Zone (circle one): EST CST MST PST ** Indicate specific analytes under comments.

Distribution: White / yellow (Paragon); pink retained by originator.

Form 20214.xls (1/3/01)



Paragon Analytics, Inc.

225 Conference Drive, Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID)

Date

Page 5 of 9

Project Name / No.: _____

Sampler(s): _____

(circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Company:
Address:

[Handwritten signatures]

circle method or specify under comments

| Sample ID | Date | Time * | Lab ID | Matrix | No. of Containers |
|-----------|--------|--------|--------|--------|-------------------|
| SWB2608 | 5/6/01 | 16:00 | 25 | Soln | 3 |
| SWB2609 | 5/6/01 | 15:40 | 26 | Soln | 3 |
| SWB2700 | 5/6/01 | 15:00 | 27 | Soln | 3 |
| SWB2701 | 5/6/01 | 15:10 | 28 | Soln | 3 |
| SWB2702 | 5/6/01 | 15:30 | 29 | Soln | 3 |
| SWB2703 | 5/6/01 | 15:45 | 30 | Soln | 3 |
| SWB2704 | 5/6/01 | 16:00 | 31 | Soln | 3 |
| SWB2705 | 5/6/01 | 16:15 | 32 | Soln | 3 |
| SWB2706 | 5/6/01 | 16:30 | 33 | Soln | 3 |
| SWB2707 | 5/6/01 | 16:45 | 34 | Soln | 3 |
| SWB2708 | 5/6/01 | 17:00 | 35 | Soln | 3 |
| SWB2709 | 5/6/01 | 17:15 | 36 | Soln | 3 |
| SWB2710 | 5/6/01 | 17:30 | 37 | Soln | 3 |
| SWB2711 | 5/6/01 | 17:45 | 38 | Soln | 3 |
| SWB2712 | 5/6/01 | 18:00 | 39 | Soln | 3 |
| SWB2713 | 5/6/01 | 18:15 | 40 | Soln | 3 |
| SWB2714 | 5/6/01 | 18:30 | 41 | Soln | 3 |
| SWB2715 | 5/6/01 | 18:45 | 42 | Soln | 3 |
| SWB2716 | 5/6/01 | 19:00 | 43 | Soln | 3 |
| SWB2717 | 5/6/01 | 19:15 | 44 | Soln | 3 |
| SWB2718 | 5/6/01 | 19:30 | 45 | Soln | 3 |
| SWB2719 | 5/6/01 | 19:45 | 46 | Soln | 3 |
| SWB2720 | 5/6/01 | 20:00 | 47 | Soln | 3 |
| SWB2721 | 5/6/01 | 20:15 | 48 | Soln | 3 |
| SWB2722 | 5/6/01 | 20:30 | 49 | Soln | 3 |
| SWB2723 | 5/6/01 | 20:45 | 50 | Soln | 3 |
| SWB2724 | 5/6/01 | 21:00 | 51 | Soln | 3 |
| SWB2725 | 5/6/01 | 21:15 | 52 | Soln | 3 |
| SWB2726 | 5/6/01 | 21:30 | 53 | Soln | 3 |
| SWB2727 | 5/6/01 | 21:45 | 54 | Soln | 3 |
| SWB2728 | 5/6/01 | 22:00 | 55 | Soln | 3 |
| SWB2729 | 5/6/01 | 22:15 | 56 | Soln | 3 |
| SWB2730 | 5/6/01 | 22:30 | 57 | Soln | 3 |
| SWB2731 | 5/6/01 | 22:45 | 58 | Soln | 3 |
| SWB2732 | 5/6/01 | 23:00 | 59 | Soln | 3 |
| SWB2733 | 5/6/01 | 23:15 | 60 | Soln | 3 |
| SWB2734 | 5/6/01 | 23:30 | 61 | Soln | 3 |
| SWB2735 | 5/6/01 | 23:45 | 62 | Soln | 3 |
| SWB2736 | 5/6/01 | 23:59 | 63 | Soln | 3 |
| SWB2737 | 5/6/01 | 00:00 | 64 | Soln | 3 |
| SWB2738 | 5/6/01 | 00:15 | 65 | Soln | 3 |
| SWB2739 | 5/6/01 | 00:30 | 66 | Soln | 3 |
| SWB2740 | 5/6/01 | 00:45 | 67 | Soln | 3 |
| SWB2741 | 5/6/01 | 01:00 | 68 | Soln | 3 |
| SWB2742 | 5/6/01 | 01:15 | 69 | Soln | 3 |
| SWB2743 | 5/6/01 | 01:30 | 70 | Soln | 3 |
| SWB2744 | 5/6/01 | 01:45 | 71 | Soln | 3 |
| SWB2745 | 5/6/01 | 02:00 | 72 | Soln | 3 |
| SWB2746 | 5/6/01 | 02:15 | 73 | Soln | 3 |
| SWB2747 | 5/6/01 | 02:30 | 74 | Soln | 3 |
| SWB2748 | 5/6/01 | 02:45 | 75 | Soln | 3 |
| SWB2749 | 5/6/01 | 03:00 | 76 | Soln | 3 |
| SWB2750 | 5/6/01 | 03:15 | 77 | Soln | 3 |
| SWB2751 | 5/6/01 | 03:30 | 78 | Soln | 3 |
| SWB2752 | 5/6/01 | 03:45 | 79 | Soln | 3 |
| SWB2753 | 5/6/01 | 04:00 | 80 | Soln | 3 |
| SWB2754 | 5/6/01 | 04:15 | 81 | Soln | 3 |
| SWB2755 | 5/6/01 | 04:30 | 82 | Soln | 3 |
| SWB2756 | 5/6/01 | 04:45 | 83 | Soln | 3 |
| SWB2757 | 5/6/01 | 05:00 | 84 | Soln | 3 |
| SWB2758 | 5/6/01 | 05:15 | 85 | Soln | 3 |
| SWB2759 | 5/6/01 | 05:30 | 86 | Soln | 3 |
| SWB2760 | 5/6/01 | 05:45 | 87 | Soln | 3 |
| SWB2761 | 5/6/01 | 06:00 | 88 | Soln | 3 |
| SWB2762 | 5/6/01 | 06:15 | 89 | Soln | 3 |
| SWB2763 | 5/6/01 | 06:30 | 90 | Soln | 3 |
| SWB2764 | 5/6/01 | 06:45 | 91 | Soln | 3 |
| SWB2765 | 5/6/01 | 07:00 | 92 | Soln | 3 |
| SWB2766 | 5/6/01 | 07:15 | 93 | Soln | 3 |
| SWB2767 | 5/6/01 | 07:30 | 94 | Soln | 3 |
| SWB2768 | 5/6/01 | 07:45 | 95 | Soln | 3 |
| SWB2769 | 5/6/01 | 08:00 | 96 | Soln | 3 |
| SWB2770 | 5/6/01 | 08:15 | 97 | Soln | 3 |
| SWB2771 | 5/6/01 | 08:30 | 98 | Soln | 3 |
| SWB2772 | 5/6/01 | 08:45 | 99 | Soln | 3 |
| SWB2773 | 5/6/01 | 09:00 | 100 | Soln | 3 |
| SWB2774 | 5/6/01 | 09:15 | 101 | Soln | 3 |
| SWB2775 | 5/6/01 | 09:30 | 102 | Soln | 3 |
| SWB2776 | 5/6/01 | 09:45 | 103 | Soln | 3 |
| SWB2777 | 5/6/01 | 10:00 | 104 | Soln | 3 |
| SWB2778 | 5/6/01 | 10:15 | 105 | Soln | 3 |
| SWB2779 | 5/6/01 | 10:30 | 106 | Soln | 3 |
| SWB2780 | 5/6/01 | 10:45 | 107 | Soln | 3 |
| SWB2781 | 5/6/01 | 10:59 | 108 | Soln | 3 |
| SWB2782 | 5/6/01 | 11:00 | 109 | Soln | 3 |
| SWB2783 | 5/6/01 | 11:15 | 110 | Soln | 3 |
| SWB2784 | 5/6/01 | 11:30 | 111 | Soln | 3 |
| SWB2785 | 5/6/01 | 11:45 | 112 | Soln | 3 |
| SWB2786 | 5/6/01 | 11:59 | 113 | Soln | 3 |
| SWB2787 | 5/6/01 | 12:00 | 114 | Soln | 3 |
| SWB2788 | 5/6/01 | 12:15 | 115 | Soln | 3 |
| SWB2789 | 5/6/01 | 12:30 | 116 | Soln | 3 |
| SWB2790 | 5/6/01 | 12:45 | 117 | Soln | 3 |
| SWB2791 | 5/6/01 | 12:59 | 118 | Soln | 3 |
| SWB2792 | 5/6/01 | 13:00 | 119 | Soln | 3 |
| SWB2793 | 5/6/01 | 13:15 | 120 | Soln | 3 |
| SWB2794 | 5/6/01 | 13:30 | 121 | Soln | 3 |
| SWB2795 | 5/6/01 | 13:45 | 122 | Soln | 3 |
| SWB2796 | 5/6/01 | 13:59 | 123 | Soln | 3 |
| SWB2797 | 5/6/01 | 14:00 | 124 | Soln | 3 |
| SWB2798 | 5/6/01 | 14:15 | 125 | Soln | 3 |
| SWB2799 | 5/6/01 | 14:30 | 126 | Soln | 3 |
| SWB2800 | 5/6/01 | 14:45 | 127 | Soln | 3 |
| SWB2801 | 5/6/01 | 14:59 | 128 | Soln | 3 |
| SWB2802 | 5/6/01 | 15:00 | 129 | Soln | 3 |
| SWB2803 | 5/6/01 | 15:15 | 130 | Soln | 3 |
| SWB2804 | 5/6/01 | 15:30 | 131 | Soln | 3 |
| SWB2805 | 5/6/01 | 15:45 | 132 | Soln | 3 |
| SWB2806 | 5/6/01 | 15:59 | 133 | Soln | 3 |
| SWB2807 | 5/6/01 | 16:00 | 134 | Soln | 3 |
| SWB2808 | 5/6/01 | 16:15 | 135 | Soln | 3 |
| SWB2809 | 5/6/01 | 16:30 | 136 | Soln | 3 |
| SWB2810 | 5/6/01 | 16:45 | 137 | Soln | 3 |
| SWB2811 | 5/6/01 | 16:59 | 138 | Soln | 3 |
| SWB2812 | 5/6/01 | 17:00 | 139 | Soln | 3 |
| SWB2813 | 5/6/01 | 17:15 | 140 | Soln | 3 |
| SWB2814 | 5/6/01 | 17:30 | 141 | Soln | 3 |
| SWB2815 | 5/6/01 | 17:45 | 142 | Soln | 3 |
| SWB2816 | 5/6/01 | 17:59 | 143 | Soln | 3 |
| SWB2817 | 5/6/01 | 18:00 | 144 | Soln | 3 |
| SWB2818 | 5/6/01 | 18:15 | 145 | Soln | 3 |
| SWB2819 | 5/6/01 | 18:30 | 146 | Soln | 3 |
| SWB2820 | 5/6/01 | 18:45 | 147 | Soln | 3 |
| SWB2821 | 5/6/01 | 18:59 | 148 | Soln | 3 |
| SWB2822 | 5/6/01 | 19:00 | 149 | Soln | 3 |
| SWB2823 | 5/6/01 | 19:15 | 150 | Soln | 3 |
| SWB2824 | 5/6/01 | 19:30 | 151 | Soln | 3 |
| SWB2825 | 5/6/01 | 19:45 | 152 | Soln | 3 |
| SWB2826 | 5/6/01 | 19:59 | 153 | Soln | 3 |
| SWB2827 | 5/6/01 | 20:00 | 154 | Soln | 3 |
| SWB2828 | 5/6/01 | 20:15 | 155 | Soln | 3 |
| SWB2829 | 5/6/01 | 20:30 | 156 | Soln | 3 |
| SWB2830 | 5/6/01 | 20:45 | 157 | Soln | 3 |
| SWB2831 | 5/6/01 | 20:59 | 158 | Soln | 3 |
| SWB2832 | 5/6/01 | 21:00 | 159 | Soln | 3 |
| SWB2833 | 5/6/01 | 21:15 | 160 | Soln | 3 |
| SWB2834 | 5/6/01 | 21:30 | 161 | Soln | 3 |
| SWB2835 | 5/6/01 | 21:45 | 162 | Soln | 3 |
| SWB2836 | 5/6/01 | 21:59 | 163 | Soln | 3 |
| SWB2837 | 5/6/01 | 22:00 | 164 | Soln | 3 |
| SWB2838 | 5/6/01 | 22:15 | 165 | Soln | 3 |
| SWB2839 | 5/6/01 | 22:30 | 166 | Soln | 3 |
| SWB2840 | 5/6/01 | 22:45 | 167 | Soln | 3 |
| SWB2841 | 5/6/01 | 22:59 | 168 | Soln | 3 |
| SWB2842 | 5/6/01 | 23:00 | 169 | Soln | 3 |
| SWB2843 | 5/6/01 | 23:15 | 170 | Soln | 3 |
| SWB2844 | 5/6/01 | 23:30 | 171 | Soln | 3 |
| SWB2845 | 5/6/01 | 23:45 | 172 | Soln | 3 |
| SWB2846 | 5/6/01 | 23:59 | 173 | Soln | 3 |
| SWB2847 | 5/6/01 | 00:00 | 174 | Soln | 3 |
| SWB2848 | 5/6/01 | 00:15 | 175 | Soln | 3 |
| SWB2849 | 5/6/01 | 00:30 | 176 | Soln | 3 |
| SWB2850 | 5/6/01 | 00:45 | 177 | Soln | 3 |
| SWB2851 | 5/6/01 | 01:00 | 178 | Soln | 3 |
| SWB2852 | 5/6/01 | 01:15 | 179 | Soln | 3 |
| SWB2853 | 5/6/01 | 01:30 | 180 | Soln | 3 |
| SWB2854 | 5/6/01 | 01:45 | 181 | Soln | 3 |
| SWB2855 | 5/6/01 | 01:59 | 182 | Soln | 3 |
| SWB2856 | 5/6/01 | 02:00 | 183 | Soln | 3 |
| SWB2857 | 5/6/01 | 02:15 | 184 | Soln | 3 |
| SWB2858 | 5/6/01 | 02:30 | 185 | Soln | 3 |
| SWB2859 | 5/6/01 | 02:45 | 186 | Soln | 3 |
| SWB2860 | 5/6/01 | 02:59 | 187 | Soln | 3 |
| SWB2861 | 5/6/01 | 03:00 | 188 | Soln | 3 |
| SWB2862 | 5/6/01 | 03:15 | 189 | Soln | 3 |
| SWB2863 | 5/6/01 | 03:30 | 190 | Soln | 3 |
| SWB2864 | 5/6/01 | 03:45 | 191 | Soln | 3 |
| SWB2865 | 5/6/01 | 03:59 | 192 | Soln | 3 |
| SWB2866 | 5/6/01 | 04:00 | 193 | Soln | 3 |
| SWB2867 | 5/6/01 | 04:15 | 194 | Soln | 3 |
| SWB2868 | 5/6/01 | 04:30 | 195 | Soln | 3 |
| SWB2869 | 5/6/01 | 04:45 | 196 | Soln | 3 |
| SWB2870 | 5/6/01 | 04:59 | 197 | Soln | 3 |
| SWB2871 | 5/6/01 | 05:00 | 198 | Soln | 3 |
| SWB2872 | 5/6/01 | 05:15 | 199 | Soln | 3 |
| SWB2873 | 5/6/01 | 05:30 | 200 | Soln | 3 |
| SWB2874 | 5/6/01 | 05:45 | 201 | Soln | 3 |
| SWB2875 | 5/6/01 | 05:59 | 202 | Soln | 3 |
| SWB2876 | 5/6/01 | 06:00 | 203 | Soln | 3 |
| SWB2877 | 5/6/01 | 06:15 | 204 | Soln | 3 |
| SWB2878 | 5/6/01 | 06:30 | 205 | Soln | 3 |
| SWB2879 | 5/6/01 | 06:45 | 206 | Soln | 3 |
| SWB2880 | 5/6/01 | 06:59 | 207 | Soln | 3 |
| SWB2881 | 5/6/01 | 07:00 | 208 | Soln | 3 |
| SWB2882 | 5/6/01 | 07:15 | 209 | Soln | 3 |
| SWB2883 | 5/6/01 | 07:30 | 210 | Soln | 3 |
| SWB2884 | 5/6/01 | 07:45 | 211 | | |

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Kent + Sullivan WORKORDER NO: 0405096
 PROJECT MANAGER: Debbie Fazio INITIALS: dw DATE: 5/12/04

| | | | |
|---|--------------------------------------|--------------------------------------|-------------------------------------|
| 1. Does this project require any special handling in addition to standard Paragon procedures? | <input checked="" type="radio"/> Yes | No | |
| IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.) | | <input checked="" type="radio"/> Yes | No |
| 2. Are custody seals on shipping containers intact? How many custody seals are provided? <u>2 each</u> | N/A | <input checked="" type="radio"/> Yes | No |
| 3. Are the custody seals on sample containers intact? | <input checked="" type="radio"/> N/A | Yes | No |
| 4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos? | | <input checked="" type="radio"/> Yes | No |
| 5. Is the COC complete? Relinquished: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Analyses Requested: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | N/A | <input checked="" type="radio"/> Yes | No |
| 6. Is the COC in agreement with the samples received? No. of Samples: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Sample ID's: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Matrix: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No. of Containers: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | N/A | <input checked="" type="radio"/> Yes | No |
| 7. Were COC (if applicable) and sample labels legible? | | <input checked="" type="radio"/> Yes | No |
| 8. Were airbills present and/or removable? | N/A | <input checked="" type="radio"/> Yes | No |
| 9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)? Are all aqueous non-preserved samples at the correct pH? | <input checked="" type="radio"/> N/A | Yes | No |
| 10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers? | | <input checked="" type="radio"/> Yes | No |
| 11. Are all samples within holding times for the requested analyses? | | <input checked="" type="radio"/> Yes | No |
| 12. Were all sample containers received intact? (not broken or leaking, etc.) | <input checked="" type="radio"/> Yes | <input checked="" type="radio"/> No | |
| 13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide, radon), headspace free? Size of bubble: <u>< green pea</u> ; <u>> green pea</u> (List sample IDs and affected containers on Page 2) | <input checked="" type="radio"/> N/A | Yes | No |
| 14. Were samples checked for and free from the presence of residual chlorine? | <input checked="" type="radio"/> N/A | Yes | No |
| 15. Were the sample(s) shipped on ice? | N/A | <input checked="" type="radio"/> Yes | No |
| 16. Were cooler temperatures measured at 0.1 - 6 °C? IR Gun Used*: <u>1/2</u> | N/A | Yes | <input checked="" type="radio"/> No |
| 17. Were all samples cooled that should have been cooled? | N/A | Yes | <input checked="" type="radio"/> No |

Cooler #'s 924 548 847 749 868 22
 Temperature 10° 10° 9° 15° 12° 14° °C
 Project Manager Signature / Date: D. Fazio 5/11/04

A NO RESPONSE TO ANY QUESTION EXCEPT # 1 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM

* IR Gun #1 (original): Raytek, SN SC-PM3/T29403
 IR Gun #2 (newer): Oakton, SN 2SCIR1201

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Kent + Sullivan WORKORDER NO: 3405096
 PROJECT MANAGER: Debbie Fazio INITIALS: DW DATE: 5/12/04

- Custody seals broken (on outside of shipping container or on sample containers).
No Chain-of-Custody (COC) present.
- Number of samples on the COC do not match the number of samples received.
- Aqueous samples not preserved correctly (see pH discussion below).
- SVOC samples contained residual chlorine (list sample IDs and affected containers below).
- Samples received at inappropriate temperature.
- Insufficient sample to perform requested analyses.
- Extraction or analytical holding times expired in transit.
- Broken/leaking bottles and intact bottles received in same cooler (list affected sample IDs below).
- No analyses requested.
- Incorrect sample type received.
- VOAs, reactive CN/S, radon not headspace free (list sample IDs and affected vials below).
- Airbills not present and/or removable (record applicable shipper's tracking number below).
- Other (describe below).

Describe discrepancy:

- All samples received between 9° - 15° C. Refer to page 1 for cooler temperatures and refer to DOT Survey pages for cooler contents. Insufficient ice packed with samples.
- Sample #17, bottle 2: Container received with a small crack in lid, no loss of sample was apparent, lid was replaced during sample check-in.

Was the client contacted? No; Yes: Name Sue Kent Date/Time 5/14/04

Was the pH of any sample adjusted by the laboratory? No; Yes (see Table below):

NOTE: No pH adjustments shall be made without prior consent of Project Manager. After pH adjustment, hold metals and radchem samples ≥ 16 hr before analysis.

| Sample ID | Initial pH | Final pH (wait 30 min) | Type of Reagent Used | Lot No. of Reagent Used | Initials / Date / Time |
|-----------|------------|------------------------|----------------------|-------------------------|------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Was the laboratory directed to proceed with the analysis of any samples yielding the presence of residual chlorine? No; Yes (see notes above).

Project Manager Signature / Date: TJ 5/14/04

000397

SAMPLE LOGIN / DOT SURVEY

Client: Kent & SullivanWorkorder No: 0405096 & 0405097Project Manager: Debbie FazioInitials: AW Date: 05/12/04COOLER #: 924External Micro R Meter Reading (μ R/hr): 190**Paragon Sample ID:**

0405096-1-1
 0405096-1-2
 0405096-2-1
 0405096-2-2
 0405096-2-3
 0405096-3-1
 0405096-3-2
 0405096-3-3
 0405096-7-1
 0405096-7-2
 0405096-7-3
 0405096-8-1
 0405096-8-2
 0405096-8-3
 0405096-9-1
 0405096-9-2
 0405096-9-3
 0405096-10-1
 0405096-10-2
 0405096-10-3
 0405096-16-1
 0405096-16-2
 0405096-16-3

Client Sample ID:

MSED-01
 MSED-01
 MSED-02
 MSED-02
 MSED-02
 MSED-03
 MSED-03
 MSED-03
 MSED-07
 MSED-07
 MSED-07
 MSED-08
 MSED-08
 MSED-08
 MSED-09
 MSED-09
 MSED-09
 MSED-10
 MSED-10
 MSED-10
 SSED-06
 SSED-06
 SSED-06

Micro R Meter Reading (μ R/hr):

< background
 35
 75
 < background
 30
 < background
 < background
 150
 > background
 30
 40
 < background
 < background
 < background

0405097-2-1
 0405097-2-2
 0405097-2-3
 0405097-3-1
 0405097-3-2
 0405097-3-3
 0405097-17-1

MR-01
 MR-01
 MR-01
 MR-02
 MR-02
 MR-02
 300-01

70
 60
 80
 85
 85
 85
 800

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: Susan Kent Date/Time: 5/14/04Project Manager Signature/ Date: DJ 5/14/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & SullivanWorkorder No: 0405096 & 0405097Project Manager: Debbie FazioInitials: AW Date: 05/12/04COOLER #: 898External Micro R Meter Reading (μ R/hr): 140

| Paragon Sample ID: | Client Sample ID: | Micro R Meter Reading (μ R/hr): |
|--------------------|-------------------|--------------------------------------|
| 0405096-4-1 | MSED-04 | < background |
| 0405096-4-2 | MSED-04 | < background |
| 0405096-4-3 | MSED-04 | < background |
| 0405096-11-1 | SSED-01 | < background |
| 0405096-11-2 | SSED-01 | < background |
| 0405096-11-3 | SSED-01 | < background |
| 0405096-26-1 | SOIL-02 | < background |
| 0405096-26-2 | SOIL-02 | < background |
| 0405096-26-3 | SOIL-02 | < background |
| 0405096-27-1 | SOIL-04 | < background |
| 0405096-27-2 | SOIL-04 | 40 |
| 0405096-27-3 | SOIL-04 | < background |
| 0405096-28-1 | SOIL-05 | 30 |
| 0405096-28-2 | SOIL-05 | < background |
| 0405096-28-3 | SOIL-05 | < background |
| 0405097-4-1 | GR-01 | < background |
| 0405097-6-1 | GR-03 | < background |
| 0405097-13-1 | GR-10 | < background |
| 0405097-14-1 | QM-01 | < background |
| 0405097-16-1 | QM-03 | < background |
| 0405097-18-1 | 300-02 | 45 |
| 0405097-19-1 | 700-01 | 1000 |
| 0405097-19-2 | 700-01 | 950 |
| 0405097-19-3 | 700-01 | 1100 |

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: Sue Kent Date/Time: 5/14/04Project Manager Signature/ Date: DJ 5/14/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & SullivanWorkorder No: 0405096 & 0405097Project Manager: Debbie FazioInitials: AWDate: 05/12/04COOLER #: 897External Micro R Meter Reading (μ R/hr): 320**Paragon Sample ID:**

0405096-5-1
0405096-5-2
0405096-5-3
0405096-21-1
0405096-21-2
0405096-22-1
0405096-22-2
0405096-22-3
0405096-22-4
0405096-22-5
0405096-23-1
0405096-23-2
0405096-24-1
0405096-24-2

Client Sample ID:

MSED-05
MSED-05
MSED-05
GEN-01
GEN-01
GEN-02
GEN-02
GEN-02
GEN-02
GEN-02
GEN-03
GEN-03
GEN-04
GEN-04

Micro R Meter Reading (μ R/hr):

< background
< background
< background
28
28
30
29
< background
< background

0405097-9-1
0405097-11-1
0405097-15-1
0405097-20-1
0405097-24-1
0405097-25-1
0405097-27-1

GR-06
GR-08
QM-02
700-02
900-02
900-03
900-05

30
< background
< background
250
1500
300
100

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: Sue Luttrell Date/Time: 5/14/04Project Manager Signature/ Date: Debbie Fazio 5/14/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & SullivanWorkorder No: 0405096 & 0405097Project Manager: Debbie FazioInitials: AW Date: 05/12/04COOLER #: 749External Micro R Meter Reading (μ R/hr): 300

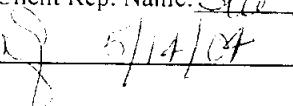
| Paragon Sample ID: | Client Sample ID: | Micro R Meter Reading (μ R/hr): |
|--------------------|-------------------|--------------------------------------|
| 0405096-6-1 | MSED-06 | 40 |
| 0405096-12-1 | SSED-02 | 40 |
| 0405096-12-2 | SSED-02 | < background |
| 0405096-12-3 | SSED-02 | < background |
| 0405096-18-1 | SSED-08 | < background |
| 0405096-18-2 | SSED-08 | < background |
| 0405096-18-3 | SSED-08 | 30 |
| 0405096-19-1 | SSED-09 | < background |
| 0405096-19-2 | SSED-09 | < background |
| 0405096-19-3 | SSED-09 | < background |
| 0405096-25-1 | SOIL-01 | < background |
| 0405096-25-2 | SOIL-01 | < background |
| 0405096-25-3 | SOIL-01 | < background |
| | | |
| 0405097-1-1 | HR-01 | 140 |
| 0405097-5-1 | GR-02 | < background |
| 0405097-7-1 | GR-04 | 90 |
| 0405097-28-1 | OSA-01 | 1200 |
| 0405097-28-2 | OSA-01 | 1100 |
| 0405097-28-3 | OSA-01 | 1200 |

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: Sue Kent Date/Time: 5/14/04Project Manager Signature/ Date: Debbie Fazio 5/14/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & SullivanWorkorder No: 0405096 & 0405097Project Manager: Debbie FazioInitials: AWDate: 05/12/04COOLER #: 868External Micro R Meter Reading (μ R/hr): 320

| Paragon Sample ID: | Client Sample ID: | Micro R Meter Reading (μ R/hr): |
|--------------------|-------------------|--------------------------------------|
| 0405096-13-1 | SSED-03 | < background |
| 0405096-13-2 | SSED-03 | < background |
| 0405096-13-3 | SSED-03 | < background |
| 0405096-14-1 | SSED-04 | < background |
| 0405096-14-2 | SSED-04 | < background |
| 0405096-14-3 | SSED-04 | < background |
| 0405096-15-1 | SSED-05 | < background |
| 0405096-15-2 | SSED-05 | < background |
| 0405096-15-3 | SSED-05 | < background |
| 0405096-17-1 | SSED-07 | < background |
| 0405096-17-2 | SSED-07 | < background |
| 0405096-17-3 | SSED-07 | < background |
| 0405096-20-1 | SSED-10 | < background |
| 0405096-20-2 | SSED-10 | < background |
| 0405096-20-3 | SSED-10 | < background |
| 0405097-8-1 | GR-05 | < background |
| 0405097-10-1 | GR-07 | < background |
| 0405097-12-1 | GR-09 | < background |
| 0405097-21-1 | 700-03 | 800 |
| 0405097-21-2 | 700-03 | 950 |
| 0405097-21-3 | 700-03 | 850 |
| 0405097-26-1 | 900-04 | 95 |
| 0405097-29-1 | OSA-02 | 180 |
| 0405097-29-2 | OSA-02 | 150 |
| 0405097-29-3 | OSA-02 | 160 |
| 0405097-30-1 | OSA-03 | 200 |
| 0405097-30-2 | OSA-03 | 250 |
| 0405097-30-3 | OSA-03 | 150 |

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: Sue Kent Date/Time: 5/14/04Project Manager Signature/ Date:  5/14/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & SullivanWorkorder No: 0405096 & 0405097Project Manager: Debbie FazioInitials: AW Date: 05/12/04COOLER #: 22External Micro R Meter Reading (μ R/hr): 260

| Paragon Sample ID: | Client Sample ID: | Micro R Meter Reading (μ R/hr): |
|--------------------|-------------------|--------------------------------------|
| 0405096-29-1 | SOIL-07 | < background |
| 0405096-29-2 | SOIL-07 | < background |
| 0405096-29-3 | SOIL-07 | < background |
| 0405096-30-1 | SOIL-08 | 45 |
| 0405096-30-2 | SOIL-08 | 40 |
| 0405096-30-3 | SOIL-08 | 40 |
| 0405096-31-1 | SOIL-09 | < background |
| 0405096-31-2 | SOIL-09 | < background |
| 0405096-31-3 | SOIL-09 | < background |
| 0405096-32-1 | SOIL-10 | 55 |
| 0405096-32-2 | SOIL-10 | 50 |
| 0405096-32-3 | SOIL-10 | 65 |
| | | |
| 0405097-22-1 | 700-04 | 450 |
| 0405097-23-1 | 900-01 | 110 |
| 0405097-23-2 | 900-01 | 110 |
| 0405097-23-3 | 900-01 | 140 |

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: Sue Kurt Date/Time: 5/14/04Project Manager Signature/ Date: D. Fazio 5/14/04

0405096
0405097

1-800-2ALASKA

027 KTN 5436-6152 Box No.
0001

Pieces Total Weight Date
17 865 10-MAY-04

14 RAIDOCOOLERS COOL
3 MT COOLERS

190

Destination

DEN

ARTIC 0-0410-3-1635

#24

2 seats
10⁰⁰



1-800-2ALASKA

027 KTN 5436-6152 Box No.
0015

Pieces Total Weight Date
17 865 10-MAY-04

14 RAIDOCOOLERS COOL
3 MT COOLERS

140

Destination

DEN

ARTIC 0-0410-3-1635

#898



1-800-2ALASKA

027 KTN 5436-6152 Box No.
0011

Pieces Total Weight Date
17 865 10-MAY-04

14 RAIDOCOOLERS COOL
3 MT COOLERS

320⁹⁰

Destination

DEN

#8

ARTIC 0-0410-3-1635

1-800-2ALASKA

027 KTN 5436-6152 Box No.
0002

Pieces Total Weight Date
17 865 10-MAY-04

14 RAIDOCOOLERS COOL
3 MT COOLERS

300

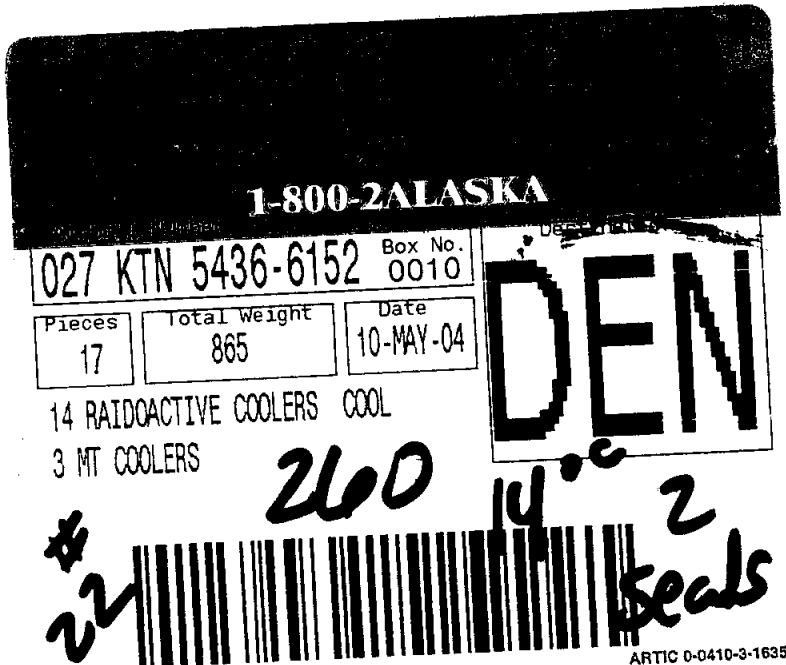
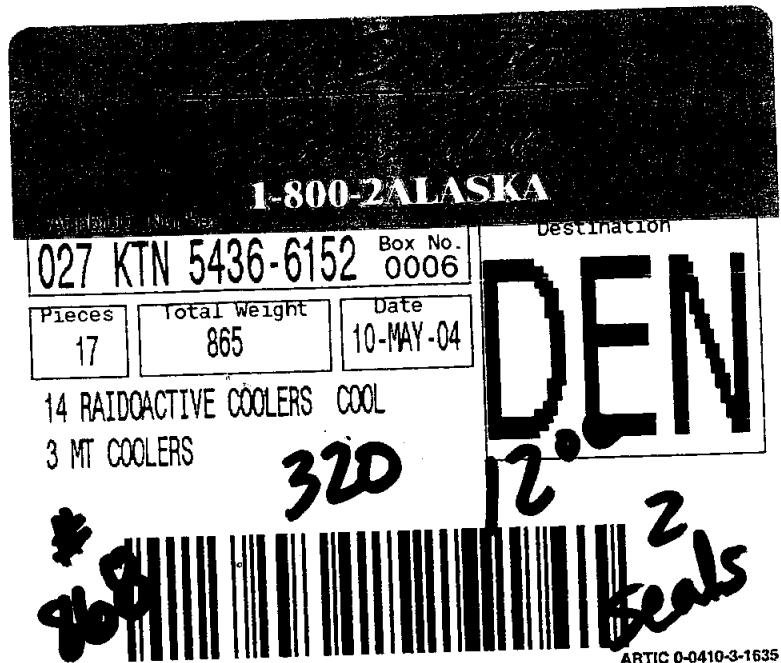
Destination

DEN

ARTIC 0-0410-3-1635

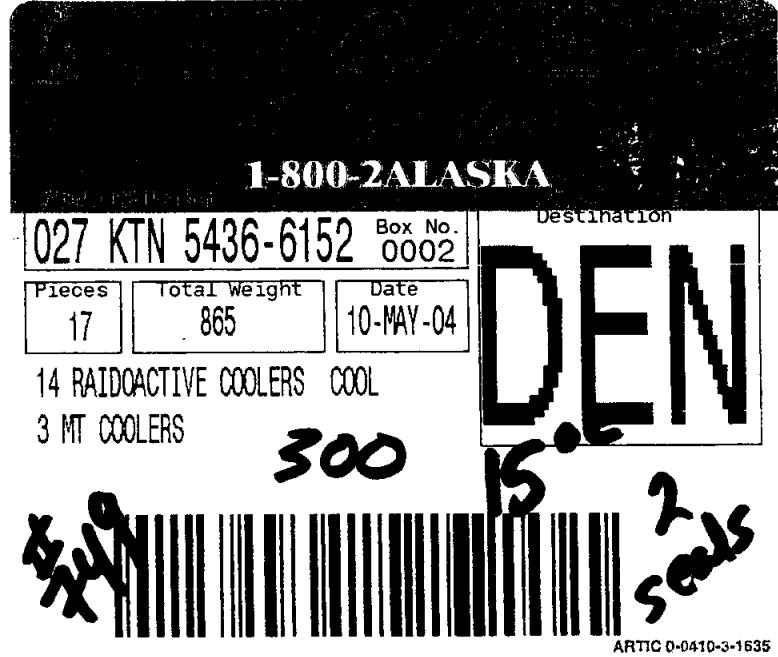
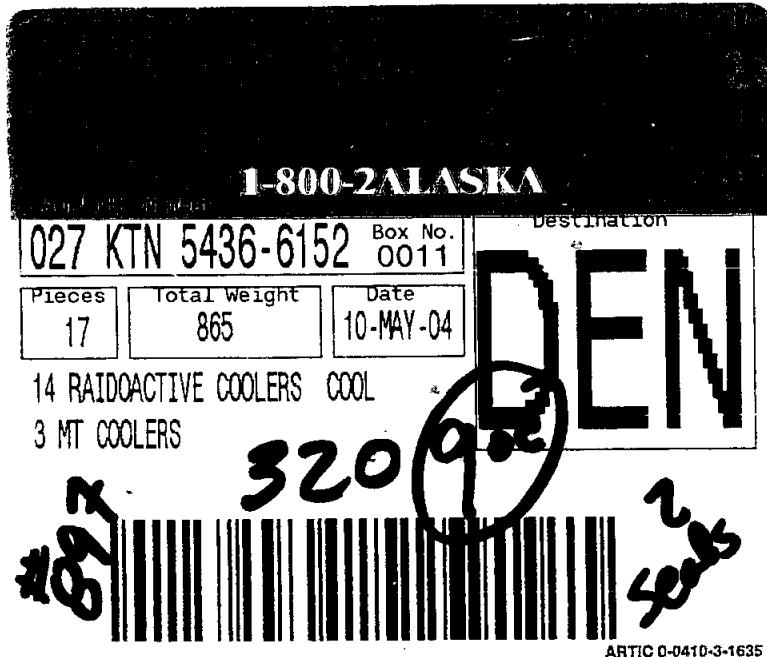
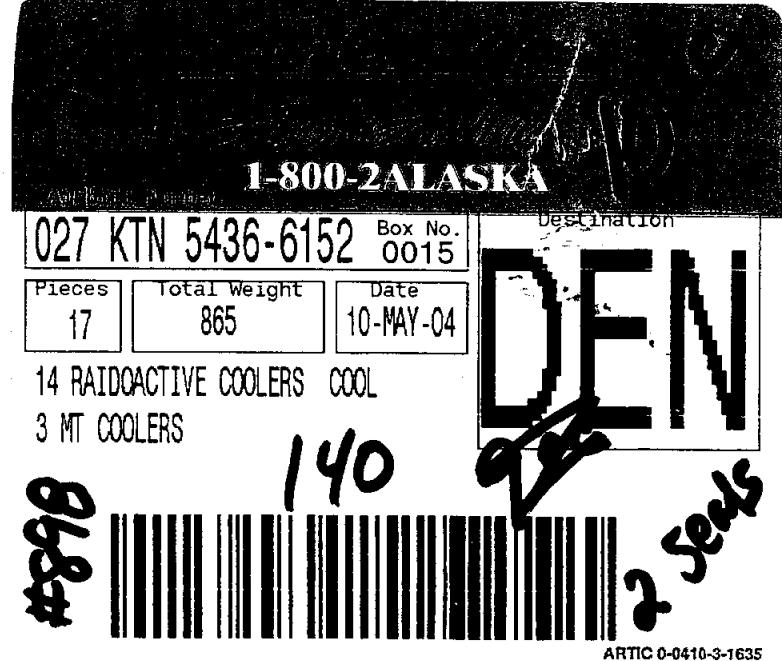
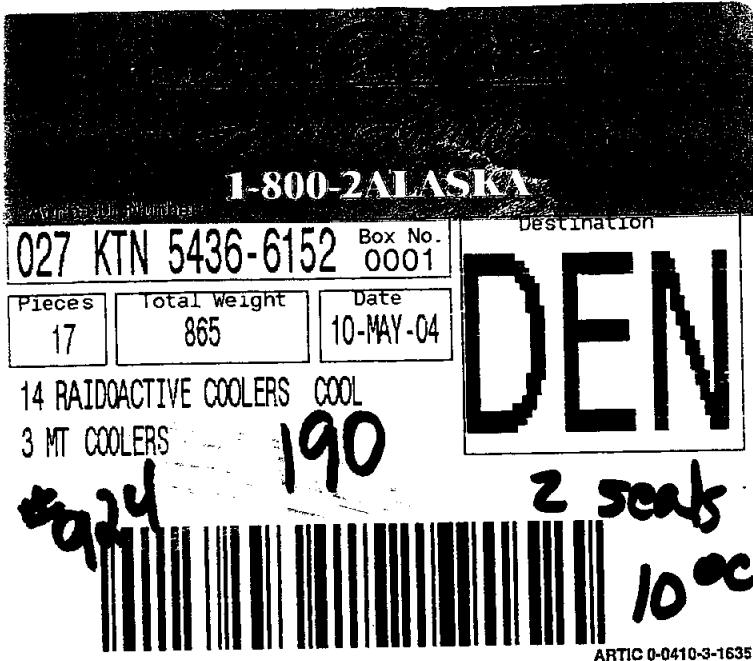
000404

0405096
0405097



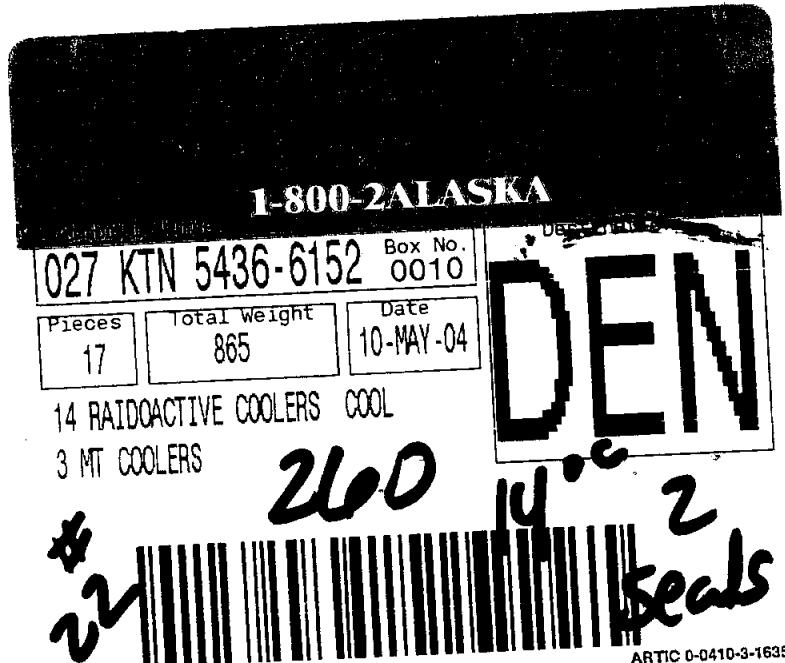
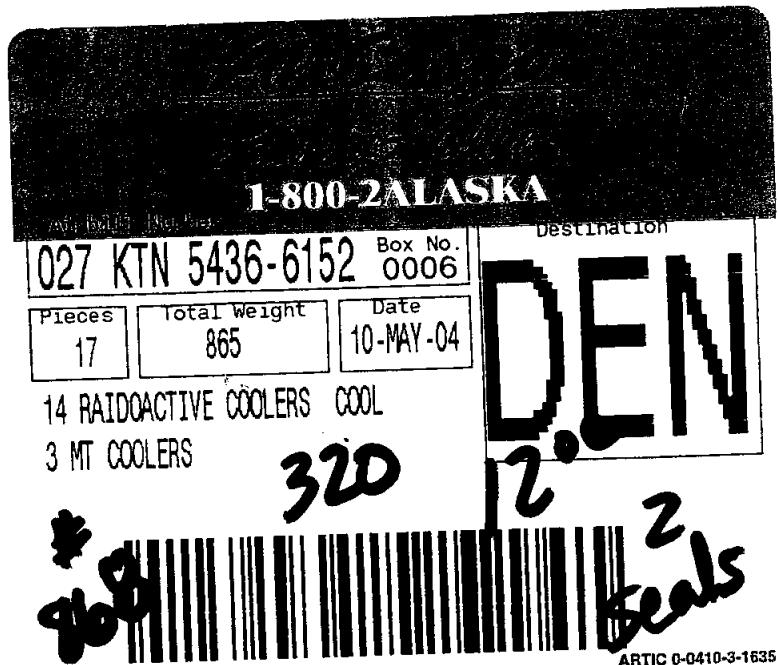
000405

0405096
0405097



000473

0405096
0405097



000407

PARAGON ANALYTICS
Radiochemistry Data Package

Section 9

**ADDITIONAL
SUPPORTING
DOCUMENTATION**

9

000408

Gamma Spectroscopy

Initial Calibration Standards Traceability



ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

66352-307

PAT FD 07/8
REC'D 8-205-03

1.0 Liter Solid in 138G GA-MA Beaker

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

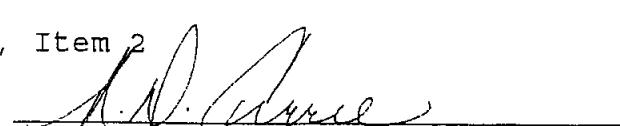
US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration date: July 1, 2003 12:00 EST

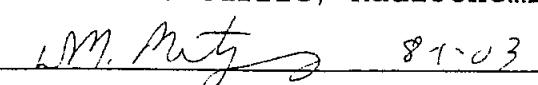
| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | 1304 | 3.0 |
| Cd-109 | 88 | 462.6 | 1862 | 3.3 |
| Co-57 | 122 | 271.79 | 1032 | 2.8 |
| Ce-139 | 166 | 137.6 | 1419 | 2.8 |
| Hg-203 | 279 | 46.61 | 3194 | 2.7 |
| Sn-113 | 392 | 115.1 | 1960 | 2.6 |
| Cs-137 | 662 | 30.07 | 1260 | 3.0 |
| Y-88 | 898 | 106.6 | 5060 | 2.6 |
| Co-60 | 1173 | 5.2714 | 2402 | 2.7 |
| Co-60 | 1332 | 5.2714 | 2427 | 2.6 |
| Y-88 | 1836 | 106.6 | 5287 | 2.6 |

P O NUMBER EW060303, Item 2

SOURCE PREPARED BY:


M. D. Currie, Radiochemist

Q A APPROVED:

 81-03

This standard will expire one year after the calibration date.

000417



ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD ¹ | STATISTICS ² | CALIBRATION ² | PEAK FITTING ² | GEOMETRY ² | IMPURITIES ² | WEIGHTING ² | COMBINED STANDARD UNCERTAINTY ² | RELATIVE EXPANDED UNCERTAINTY ² (K=2) |
|---------|-----------------|------------------------------------|-------------------------|--------------------------|------------------------------|-----------------------|-------------------------|------------------------|--|---|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.2 | 1.64 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 0.93 | 0.71 | 0.7 | 0 | 0.2 | 1.40 | 2.8 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.2 | 1.38 | 2.8 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.2 | 1.37 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.30 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.2 | 1.49 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.2 | 1.29 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.2 | 1.33 | 2.7 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.2 | 1.32 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.31 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4NLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Am-241 | 59.5 | 4NLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.2 | 1.36 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |

¹Calibration Methods:

4NLS (4 pi Liquid Scintillation Counting)

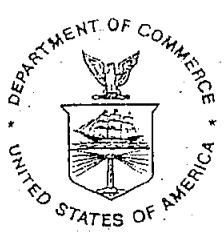
HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

000411



U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000412

ANALYTICS1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.Phone (404) 352-8677
Fax (404) 352-2837**CERTIFICATE OF CALIBRATION**

Standard Radionuclide Source

66353-307

PAI 079
rec'd 8-05-03

100 Grams of Sand in 16 Ounce PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

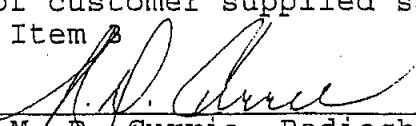
Calibration date: July 1, 2003 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | Y 1313 | 3.0 |
| Cd-109 | 88 | 462.6 | d 1874 | 3.3 |
| Co-57 | 122 | 271.79 | d 1039 | 2.8 |
| Ce-139 | 166 | 137.6 | d 1428 | 2.8 |
| Hg-203 | 279 | 46.61 | d 3214 | 2.7 |
| Sn-113 | 392 | 115.1 | d 1973 | 2.6 |
| Cs-137 | 662 | 30.07 | y 1269 | 3.0 |
| Y-88 | 898 | 106.6 | d 5093 | 2.6 |
| Co-60 | 1173 | 5.2714 | y 2417 | 2.7 |
| Co-60 | 1332 | 5.2714 | y 2442 | 2.6 |
| Y-88 | 1836 | 106.6 | d 5321 | 2.6 |

Approximately 55 mL of customer supplied sand.

P O NUMBER EW060303, Item 3

SOURCE PREPARED BY:


M. D. Currie, Radiochemist

Q A APPROVED:

 8-1-03

This standard will expire one year after the calibration date.

000413

ANALYTICS

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ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD ¹ | STATISTICS ² | CALIBRATION ² | PEAK FITTING ² | GEOMETRY ² | IMPURITIES ² | WEIGHTING ² | COMBINED STANDARD UNCERTAINTY ² | RELATIVE EXPANDED UNCERTAINTY ² (K=2) |
|---------|-----------------|------------------------------------|-------------------------|--------------------------|------------------------------|-----------------------|-------------------------|------------------------|--|---|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.2 | 1.64 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 0.93 | 0.71 | 0.7 | 0 | 0.2 | 1.40 | 2.8 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.2 | 1.38 | 2.8 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.2 | 1.37 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.30 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.2 | 1.49 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.2 | 1.29 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.2 | 1.33 | 2.7 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.2 | 1.32 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.31 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Am-241 | 59.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.2 | 1.36 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |

¹Calibration Methods:

- 4πLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

²As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

000414



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National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

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For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000445

ANALYTICS



1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

66010-307

QA ID 677
rec'd 21-30-03

500 Grams of Sand in 500 mL PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: April 1, 2003 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | Y 1408 | 3.0 |
| Cd-109 | 88 | 462.6 | d 1974 | 3.3 |
| Co-57 | 122 | 271.79 | d 1101 | 2.8 |
| Ce-139 | 166 | 137.6 | d 1479 | 2.7 |
| Hg-203 | 279 | 46.61 | d 3463 | 2.7 |
| Sn-113 | 392 | 115.1 | d 2037 | 2.6 |
| Cs-137 | 662 | 30.07 | y 1388 | 3.0 |
| Y-88 | 898 | 106.6 | d 5310 | 2.6 |
| Co-60 | 1173 | 5.2714 | y 2583 | 2.6 |
| Co-60 | 1332 | 5.2714 | y 2612 | 2.6 |
| Y-88 | 1836 | 106.6 | d 5550 | 2.6 |

290 mL of customer supplied sand.
P O NUMBER EW041003, Item 1

SOURCE PREPARED BY:

M. D. Currie, Radiochemist

Q A APPROVED:

J.M. Mertz 4-29-03

This standard will expire one year after the calibration date.

000416

ANALYTICS

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ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 112

CALIBRATION DATE: APRIL 1, 2003 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD* | STATISTICS | CALIBRATION | PEAK FITTING | GEOMETRY | IMPURITIES | WEIGHING | COMBINED STANDARD UNCERTAINTY | RELATIVE EXPANDED UNCERTAINTY (K=2) |
|---------|--------------|---------------------|------------|-------------|--------------|----------|------------|----------|-------------------------------|-------------------------------------|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.1 | 1.63 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 0.93 | 0.71 | 0.7 | 0 | 0.1 | 1.39 | 2.8 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.1 | 1.37 | 2.7 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.1 | 1.36 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.1 | 1.29 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.1 | 1.48 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.1 | 1.28 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.1 | 1.32 | 2.6 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.1 | 1.31 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.1 | 1.30 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|-------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4πLSC | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.1 | 1.49 | 3.0 |
| Am-241 | 59.5 | 4πLSC | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.1 | 1.49 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.1 | 1.35 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |

*Calibration Methods:

4πLSC (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.



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For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000413



ANALYTICS

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Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

SHIPPER'S DECLARATION

Shipment number 20080-11346 contains the following isotopes:

FORM: Solid

| <u>RADIOMUCLIDE</u> | <u>QUANTITY IN MICROCURIES*</u> |
|---------------------|---------------------------------|
| Cd-109 | 1.680 |
| Co-57 | 0.040 |
| Ce-139 | 0.057 |
| Hg-203 | 0.131 |
| Sn-113 | 0.097 |
| Cs-137 | 0.050 |
| Y-88 | 0.174 |
| Co-60 | 0.080 |
| Am-241 | 0.121 |
| TOTAL: | 2.430 |

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package-limited quantity of material, UN2910.

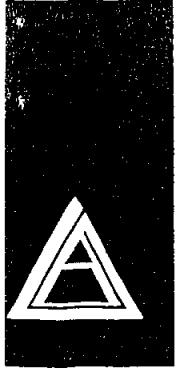
SHIPPED TO: Paragon Analytics

DATE: 4-29-03

T. K. Kahl

*Quantities stated are approximate and for shipping purposes only. For certified quantities see Certificate of Calibration for each radioactive standard.

000413



ANALYTICS

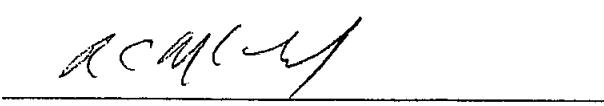
1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

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email: analytics@mindspring.com
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MSDS

**IMPORTANT SAFETY INFORMATION
DO NOT DISCARD
PLEASE ROUTE TO COMPANY SAFETY OFFICER**

Be advised that radioactive materials are not included in the notification requirements of OSHA Hazard Communication Standard (29CFR1910.1200). This does not minimize the hazards and control requirements associated with radioactive materials, which are subject to various federal and state regulations.



Robert C. McFarland, RSO
Analytics, Inc.

*****SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4*****

Sample ID: 0413002-1 FWHM Cal (718)
 Stds. Match Tolerance: 2.00 keV

Detector Number: 01 Calibration Date. . . 06/16/2004 15:56:41

FWHM(keV) = 0.88 + 0.103*En +-3.12e-03*En^2 + 4.90e-05*En^3
 (Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 1.497 | 0.89 | 1.510 | -0.12 | 1.508 |
| 2 | 88.04 | 1.583 | 1.78 | 1.611 | -4.00 | 1.549 |
| 3 | 122.06 | 1.767 | -3.79 | 1.703 | -6.73 | 1.596 |
| 4 | 165.85 | 1.742 | 2.87 | 1.794 | -8.58 | 1.652 |
| 5 | 279.00 | 2.069 | -5.54 | 1.960 | -9.47 | 1.791 |
| 6 | 391.68 | 2.018 | 2.94 | 2.079 | -8.19 | 1.922 |
| 7 | 661.64 | 2.270 | 1.50 | 2.304 | -3.65 | 2.223 |
| 8 | 898.02 | 2.449 | 1.70 | 2.491 | -0.49 | 2.479 |
| 9 | 1173.21 | 2.787 | -2.23 | 2.726 | 1.58 | 2.770 |
| 10 | 1332.48 | 2.894 | -0.60 | 2.877 | 2.05 | 2.937 |
| 11 | 1836.01 | 3.415 | 0.57 | 3.434 | 0.64 | 3.457 |

040584D02.SPC Analyzed by *MC*

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413002-2 FWHM Calibration (718)

Stds. Match Tolerance: 2.00 keV

Detector Number: 02 Calibration Date. . . 04/13/2004 11:04:17

FWHM(keV) = 0.58 + 0.013*En + 6.82e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 0.759 | -5.64 | 0.719 | 4.53 | 0.753 |
| 2 | 88.04 | 0.765 | -0.67 | 0.760 | 4.44 | 0.795 |
| 3 | 122.06 | 0.753 | 6.34 | 0.804 | 4.33 | 0.841 |
| 4 | 165.85 | 0.867 | -1.07 | 0.858 | 4.18 | 0.895 |
| 5 | 279.00 | 0.951 | 3.37 | 0.984 | 3.80 | 1.023 |
| 6 | 391.68 | 1.109 | -0.76 | 1.100 | 3.45 | 1.140 |
| 7 | 661.64 | 1.378 | -1.27 | 1.360 | 2.76 | 1.399 |
| 8 | 898.02 | 1.573 | 0.20 | 1.576 | 2.29 | 1.613 |
| 9 | 1173.21 | 1.825 | -0.36 | 1.819 | 1.84 | 1.853 |
| 10 | 1332.48 | 1.974 | -0.91 | 1.956 | 1.61 | 1.988 |
| 11 | 1836.01 | 2.363 | 0.74 | 2.381 | 1.04 | 2.406 |

Calibration Results Saved.

040559D03.SPC Analyzed by MC

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413002-3 FWHM Calibration (719)

Stds. Match Tolerance: 2.00 keV

Detector Number: 03 Calibration Date. . . 04/13/2004 11:49:25

FWHM(keV) = 0.77 + 0.011*En + 9.52e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 0.915 | -0.93 | 0.907 | -1.28 | 0.896 |
| 2 | 88.04 | 0.936 | 1.73 | 0.953 | -1.88 | 0.935 |
| 3 | 122.06 | 0.973 | 3.07 | 1.003 | -2.53 | 0.979 |
| 4 | 165.85 | 1.077 | -1.14 | 1.065 | -3.29 | 1.031 |
| 5 | 279.00 | 1.280 | -5.33 | 1.215 | -4.92 | 1.158 |
| 6 | 391.68 | 1.335 | 1.57 | 1.357 | -6.24 | 1.277 |
| 7 | 661.64 | 1.678 | 0.06 | 1.679 | -8.63 | 1.546 |
| 8 | 898.02 | 1.915 | 1.82 | 1.951 | -10.15 | 1.771 |
| 9 | 1173.21 | 2.291 | -1.37 | 2.260 | -11.53 | 2.027 |
| 10 | 1332.48 | 2.417 | 0.79 | 2.437 | -12.19 | 2.172 |
| 11 | 1836.01 | 2.995 | -0.27 | 2.986 | -13.82 | 2.624 |

Calibration Results Saved.

041069D04.SPC Analyzed by MC

SEEKER CALIBRATION RESULTS Version 2.0.4

Sample ID: 0413002-4 FWHM CALIB. (718)

Stds. Match Tolerance: 2.00 keV

Detector Number: 04 Calibration Date. . . 06/18/2004 14:11:56

FWHM(keV) = 0.58 + 0.009*En + 1.00e-03*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 0.728 | -2.96 | 0.707 | -0.84 | 0.701 |
| 2 | 88.04 | 0.759 | -1.18 | 0.751 | -0.91 | 0.744 |
| 3 | 122.06 | 0.813 | -1.73 | 0.799 | -1.27 | 0.789 |
| 4 | 165.85 | 0.778 | 9.44 | 0.859 | -1.94 | 0.843 |
| 5 | 279.00 | 1.030 | -2.41 | 1.006 | -4.01 | 0.967 |
| 6 | 391.68 | 1.153 | -0.62 | 1.146 | -6.12 | 1.080 |
| 7 | 661.64 | 1.452 | 1.14 | 1.469 | -10.65 | 1.327 |
| 8 | 898.02 | 1.802 | -3.38 | 1.743 | -13.98 | 1.529 |
| 9 | 1173.21 | 2.051 | 0.26 | 2.056 | -17.25 | 1.754 |
| 10 | 1332.48 | 2.194 | 1.86 | 2.236 | -18.90 | 1.880 |
| 11 | 1836.01 | 2.807 | -0.39 | 2.796 | -23.27 | 2.268 |

Calibration Results Saved.

031701D07.SPC Analyzed by 72

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0313003-7 FWHM Cal (677)

Stds. Match Tolerance: 2.00 keV

Detector Number: 07 Calibration Date. . . 12/09/2003 11:17:20

FWHM(keV) = 0.76 + 0.005*En + 7.78e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 0.853 | -1.16 | 0.843 | -20.51 | 0.700 |
| 2 | 88.04 | 0.873 | 0.01 | 0.873 | -11.62 | 0.782 |
| 3 | 122.06 | 0.906 | 0.16 | 0.907 | -5.54 | 0.860 |
| 4 | 165.85 | 0.945 | 0.52 | 0.950 | -1.03 | 0.940 |
| 5 | 279.00 | 1.039 | 1.58 | 1.056 | 3.76 | 1.097 |
| 6 | 391.68 | 1.159 | -0.08 | 1.158 | 4.85 | 1.217 |
| 7 | 661.64 | 1.412 | -1.15 | 1.396 | 3.67 | 1.450 |
| 8 | 898.02 | 1.598 | 0.15 | 1.600 | 1.92 | 1.632 |
| 9 | 1173.21 | 1.858 | -1.29 | 1.834 | 0.45 | 1.843 |
| 10 | 1332.48 | 1.941 | 1.40 | 1.969 | -0.01 | 1.969 |
| 11 | 1836.01 | 2.393 | -0.12 | 2.391 | 0.32 | 2.398 |

031894D08.SPC Analyzed by *X7*

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0313003-8 FWHM Cal (677)
Stds. Match Tolerance: 2.00 keV

Detector Number: 08 Calibration Date. . . 12/29/2003 12:59:15

FWHM(keV) = 0.53 + 0.022*En + 6.21e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 0.746 | -0.37 | 0.743 | 13.43 | 0.858 |
| 2 | 88.04 | 0.862 | -8.10 | 0.798 | 10.95 | 0.896 |
| 3 | 122.06 | 0.804 | 6.12 | 0.856 | 8.58 | 0.936 |
| 4 | 165.85 | 0.919 | 0.58 | 0.924 | 6.11 | 0.984 |
| 5 | 391.68 | 1.178 | 3.30 | 1.218 | -1.96 | 1.195 |
| 6 | 661.64 | 1.515 | 0.21 | 1.518 | -7.35 | 1.414 |
| 7 | 898.02 | 1.761 | -0.12 | 1.759 | -10.45 | 1.593 |
| 8 | 1173.21 | 2.058 | -1.60 | 2.025 | -13.05 | 1.792 |
| 9 | 1332.48 | 2.212 | -1.75 | 2.174 | -14.23 | 1.904 |
| 10 | 1836.01 | 2.590 | 1.48 | 2.628 | -17.00 | 2.247 |

Calibration Results Saved.

040748D10.SPC Analyzed by MC

SEEKER CALIBRATION RESULTS Version 2.0.4

Sample ID: 0413002-10 FWHM CALIB. (718)

Stds. Match Tolerance: 2.00 keV

Detector Number: 10 Calibration Date. . . 05/21/2004 15:12:03

FWHM(keV) = 1.34 + -0.029*En + 2.72e-03*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

| Pk. # | Energy (kev) | Measured FWHM(keV) | % Diff. | Calculated FWHM(keV) | % Diff. | Prev.Calc. FWHM(kev) |
|----------|-----------------|-----------------------|------------|-------------------------|------------|-------------------------|
| 1 | 59.50 | 1.217 | 4.46 | 1.274 | -10.54 | 1.152 |
| 2 | 88.04 | 1.309 | -0.44 | 1.303 | -8.38 | 1.203 |
| 3 | 122.06 | 1.364 | -1.24 | 1.348 | -6.61 | 1.264 |
| 4 | 165.85 | 1.450 | -2.54 | 1.414 | -5.10 | 1.345 |
| 5 | 279.00 | 1.682 | -4.41 | 1.611 | -3.28 | 1.560 |
| 6 | 391.68 | 1.755 | 4.01 | 1.829 | -2.85 | 1.778 |
| 7 | 661.64 | 2.487 | -3.97 | 2.392 | -3.60 | 2.309 |
| 8 | 898.02 | 2.749 | 5.62 | 2.913 | -4.81 | 2.779 |
| 9 | 1173.21 | 3.594 | -1.59 | 3.538 | -6.24 | 3.330 |
| 10 | 1332.48 | 3.912 | -0.13 | 3.907 | -7.01 | 3.651 |
| 11 | 1836.01 | 5.102 | -0.16 | 5.094 | -9.13 | 4.668 |



CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

66353-307

P A I 0719
rec'd 8-05-03

100 Grams of Sand in 16 Ounce PP Jar

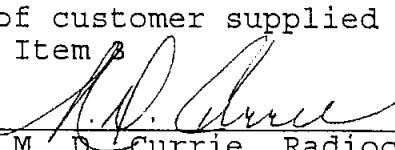
This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: July 1, 2003 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | 1313 | 3.0 |
| Cd-109 | 88 | 462.6 | 1874 | 3.3 |
| Co-57 | 122 | 271.79 | 1039 | 2.8 |
| Ce-139 | 166 | 137.6 | 1428 | 2.8 |
| Hg-203 | 279 | 46.61 | 3214 | 2.7 |
| Sn-113 | 392 | 115.1 | 1973 | 2.6 |
| Cs-137 | 662 | 30.07 | 1269 | 3.0 |
| Y-88 | 898 | 106.6 | 5093 | 2.6 |
| Co-60 | 1173 | 5.2714 | 2417 | 2.7 |
| Co-60 | 1332 | 5.2714 | 2442 | 2.6 |
| Y-88 | 1836 | 106.6 | 5321 | 2.6 |

Approximately 55 mL of customer supplied sand.
P O NUMBER EW060303, Item 3

SOURCE PREPARED BY:


 M. D. Currie, Radiochemist
Q A APPROVED: M. M. Myers 8-1-03

This standard will expire one year after the calibration date.



ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD ¹ | STATISTICS ² | CALIBRATION ² | PEAK FITTING ² | GEOMETRY ² | IMPURITIES ² | WEIGHING ² | COMBINED STANDARD UNCERTAINTY ² | RELATIVE EXPANDED UNCERTAINTY ² (K=2) |
|---------|-----------------|------------------------------------|-------------------------|--------------------------|------------------------------|-----------------------|-------------------------|-----------------------|--|---|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.2 | 1.64 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 0.93 | 0.71 | 0.7 | 0 | 0.2 | 1.40 | 2.8 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.2 | 1.38 | 2.8 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.2 | 1.37 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.30 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.2 | 1.49 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.2 | 1.29 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.2 | 1.33 | 2.7 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.2 | 1.32 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.31 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Am-241 | 59.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.2 | 1.36 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |

¹Calibration Methods:

- 4πLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

²As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

000423



U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000430

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-2 GEO 11 EFF CAL (719)

 Sampling Start: 07/01/2003 12:00:00 | Counting Start: 06/01/2004 15:24:03
 Sampling Stop: 07/01/2003 12:00:00 | Decay Time. 8.07E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 3600 Sec
 Sample Size 1.00E+002 g | Real Time 3846 Sec
 Collection Efficiency 1.0000 | Spc. File 040845D02.SPC

Detector #: 2 (Detector 2)

Energy(keV) = -0.69 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/01/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

 ====== PEAK SEARCH RESULTS ======

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 59.57 | 120.48 | 53705 | 562 | 262 | 13800 | 0.75 | a HiResid |
| 2 | 88.02 | 177.35 | 166240 | 883 | 279 | 15657 | 0.77 | a HiResid |
| 3 | 122.10 | 245.49 | 90941 | 659 | 219 | 9706 | 0.76 | a HiResid |
| 4 | 136.53 | 274.34 | 12088 | 324 | 196 | 7731 | 0.85 | a |
| 5 | 165.88 | 333.02 | 57208 | 529 | 186 | 7003 | 0.89 | a |
| 6 | 255.25 | 511.69 | 1382 | 252 | 198 | 7230 | 1.02 | a |
| 7 | 279.26 | 559.69 | 3540 | 256 | 186 | 6402 | 1.04 | a |
| 8 | 310.47 | 622.10 | 257 | 271 | 221 | 7732 | 1.25 | a |
| 9 | 391.74 | 784.57 | 31691 | 422 | 186 | 5909 | 1.15 | a |
| 10 | 509.60 | 1020.20 | 280 | 207 | 168 | 5222 | 1.26 | a |
| 11 | 511.48 | 1023.96 | 486 | 246 | 199 | 6528 | 1.67 | b |
| 12 | 661.71 | 1324.31 | 96984 | 651 | 157 | 4527 | 1.38 | a |
| 13 | 813.90 | 1628.57 | 569 | 203 | 162 | 4557 | 1.46 | a |
| 14 | 820.83 | 1642.42 | 319 | 249 | 203 | 6077 | 1.98 | b |
| 15 | 898.10 | 1796.92 | 32355 | 419 | 177 | 5788 | 1.64 | a |
| 16 | 1173.27 | 2347.04 | 97986 | 644 | 125 | 2740 | 1.86 | a |
| 17 | 1325.29 | 2650.96 | 760 | 161 | 125 | 2033 | 3.64 | a HiResid Wide Pk |
| 18 | 1332.44 | 2665.27 | 88225 | 601 | 77 | 1109 | 2.01 | b HiResid |
| 19 | 1835.85 | 3671.70 | 18978 | 282 | 48 | 379 | 2.46 | a |

040845D02.SPC Analyzed by

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4
*****Sample ID: 0413010-2 GEO 11 EFF CAL (719)
Stds. Match Tolerance: 2.00 keV

Detector Number: 02 Calibration Date. . . 06/01/2004 15:24:03

Geometry File (D02) (Sh11).EFF ID. Geo 11 Eff Cal

Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [8.73e-04*En^-4.04e+00 + 6.76e+01*En^ 8.33e-01]
(Where En = Energy in MeV)) (Exponential)

| Pk. # | Energy (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|----------|-----------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 1.14e-02 | 2.71 | 1.17e-02 | 4.39 | 1.22e-02 |
| 2 | 88.04 | 4.08e-02 | -2.49 | 3.98e-02 | -5.11 | 3.78e-02 |
| 3 | 122.06 | *6.13e-02 | 1.66 | 6.23e-02 | -3.70 | 6.01e-02 |
| 4 | 165.85 | 6.05e-02 | 0.95 | 6.10e-02 | 0.18 | 6.11e-02 |
| 5 | 391.68 | 3.38e-02 | -4.66 | 3.23e-02 | 1.93 | 3.29e-02 |
| 6 | 661.64 | 2.17e-02 | -3.87 | 2.09e-02 | 1.18 | 2.11e-02 |
| 7 | 898.02 | 1.57e-02 | 3.12 | 1.62e-02 | 0.68 | 1.63e-02 |
| 8 | 1173.21 | 1.27e-02 | 1.91 | 1.30e-02 | 0.24 | 1.30e-02 |
| 9 | 1332.48 | 1.13e-02 | 2.81 | 1.17e-02 | 0.03 | 1.17e-02 |
| 10 | 1836.01 | 8.81e-03 | 1.27 | 8.92e-03 | -0.50 | 8.88e-03 |

Calibration Results Saved.

*MANUALLY ADJUSTED EFFICIENCY FROM
ORIGINAL VALUE OF 5.73×10^{-2} , % DIFF.
FROM CALCULATED VALUE $\Rightarrow 8.03\%$.

- 279 keV PHOTOPEAK DELETED DUE TO
MORE THAN 5 HALF-LIVES EXPIRED.

CHARGES O.K. PER P.A. S.O.P 713,

MC 6/1/04

Efficiency Calibration Verification

Geo. 11 Std # 589
Det. # 2

| FROM CALIBRATION CERTIFICATE | | | | FROM ANALYTICS LIB | | | | EXPECTED ACTIVITY | | | | MEASURED ACTIVITY | | | |
|------------------------------|------|--------------|-------------|--------------------|------------------|-----|--------|-------------------|------------|-------------|-------------|-------------------|--|--|--|
| Isotope | KeV | Half Life(Y) | Gammas/Sec. | Gamma Fraction: | Mass of Standard | DPS | pCi/g | pCi/g | % Recovery | Pass ? | | | | | |
| Am-241 | 59.9 | 432.0000 | 1345 | 0.3590 | 100 | 9 | Am-241 | 3746.5 | 1012.6 | 98.8% | Pass | | | | |
| Cd-109 | 88 | 1.2666 | 1881 | 0.0361 | | | Cd-109 | 52105.3 | 14082.5 | 105.8% | Pass | | | | |
| Co-57 | 122 | 0.7441 | 1030 | 0.8551 | | | Co-57 | 1204.5 | 325.6 | 90.3% | Pass | | | | |
| Ce-139 | 166 | 0.3768 | 1402 | 0.8035 | | | Ce-139 | 1744.9 | 471.6 | >5 Halfives | >5 Halfives | | | | |
| Hg-203 | 279 | 0.1276 | 2980 | 0.7730 | | | Hg-203 | 3855.1 | 1041.9 | >5 Halfives | >5 Halfives | | | | |
| Sn-113 | 392 | 0.3151 | 1860 | 0.6490 | | | Sn-113 | 2865.9 | 774.6 | >5 Halfives | >5 Halfives | | | | |
| Cs-137 | 662 | 30.0000 | 1205 | 0.8512 | | | Cs-137 | 1415.6 | 382.6 | 103.5% | Pass | | | | |
| Y-88 | 898 | 0.2919 | 4932 | 0.9340 | | | Y-88 | 5280.5 | 1427.2 | >5 Halfives | >5 Halfives | | | | |
| Co-60 | 1173 | 5.2714 | 2360 | 1.0000 | | | Co-60 | 2360.0 | 637.8 | 95.9% | Pass | | | | |
| Co-60 | 1332 | 5.2714 | 2381 | 1.0000 | | | Co-60 | 2381.0 | 643.5 | 95.3% | Pass | | | | |
| Y-88 | 1836 | 0.2919 | 5162 | 0.9938 | | | Y-88 | 5194.2 | 1403.8 | >5 Halfives | >5 Halfives | | | | |

| FROM CALIBRATION CERTIFICATE | | | | FROM ANALYTICS LIB | | | | EXPECTED ACTIVITY | | | | MEASURED ACTIVITY | | | |
|------------------------------|------|--------------|-------------|--------------------|------------------|-----|--------|-------------------|------------|-------------|-------------|-------------------|--|--|--|
| Isotope | KeV | Half Life(Y) | Gammas/Sec. | Gamma Fraction: | Mass of Standard | DPS | pCi/g | pCi/g | % Recovery | Pass ? | | | | | |
| Am-241 | 59.9 | 432.0000 | 1345 | 0.3590 | 100 | 9 | Am-241 | 3746.5 | 1012.6 | 98.8% | Pass | | | | |
| Cd-109 | 88 | 1.2666 | 1881 | 0.0361 | | | Cd-109 | 52105.3 | 14082.5 | 105.8% | Pass | | | | |
| Co-57 | 122 | 0.7441 | 1030 | 0.8551 | | | Co-57 | 1204.5 | 325.6 | 90.3% | Pass | | | | |
| Ce-139 | 166 | 0.3768 | 1402 | 0.8035 | | | Ce-139 | 1744.9 | 471.6 | >5 Halfives | >5 Halfives | | | | |
| Hg-203 | 279 | 0.1276 | 2980 | 0.7730 | | | Hg-203 | 3855.1 | 1041.9 | >5 Halfives | >5 Halfives | | | | |
| Sn-113 | 392 | 0.3151 | 1860 | 0.6490 | | | Sn-113 | 2865.9 | 774.6 | >5 Halfives | >5 Halfives | | | | |
| Cs-137 | 662 | 30.0000 | 1205 | 0.8512 | | | Cs-137 | 1415.6 | 382.6 | 103.5% | Pass | | | | |
| Y-88 | 898 | 0.2919 | 4932 | 0.9340 | | | Y-88 | 5280.5 | 1427.2 | >5 Halfives | >5 Halfives | | | | |
| Co-60 | 1173 | 5.2714 | 2360 | 1.0000 | | | Co-60 | 2360.0 | 637.8 | 95.9% | Pass | | | | |
| Co-60 | 1332 | 5.2714 | 2381 | 1.0000 | | | Co-60 | 2381.0 | 643.5 | 95.3% | Pass | | | | |
| Y-88 | 1836 | 0.2919 | 5162 | 0.9938 | | | Y-88 | 5194.2 | 1403.8 | >5 Halfives | >5 Halfives | | | | |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-2A GEO 11 CAL VER (589)

```
-----  

Sampling Start: 07/01/2001 12:00:00 | Counting Start: 06/01/2004 16:51:08  

Sampling Stop: 07/01/2001 12:00:00 | Decay Time. . . . . 2.56E+004 Hrs  

Buildup Time. . . . . 0.00E+000 Hrs | Live Time . . . . . 1800 Sec  

Sample Size . . . . . 1.00E+002 g | Real Time . . . . . 1850 Sec  

Collection Efficiency . . . . . 1.0000 | Spc. File . . . . . 040846D02.SPC
```

```
-----  

Detector #: 2 (Detector 2)  

Energy(keV) = -0.69 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/01/2004  

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004  

Where En = Sqrt(Energy in keV)
```

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.53 | 120.39 | 28013 | 376 | 141 | 4000 | 0.78 | a |
| 2 | 87.98 | 177.28 | 28895 | 373 | 125 | 3173 | 0.78 | a HiResid |
| 3 | 98.84 | 199.00 | 21 | 67 | 55 | 830 | 0.39 | a NET< CL |
| 4 | 103.03 | 207.36 | 100 | 86 | 69 | 1173 | 0.41 | a |
| 5 | 120.39 | 242.07 | 59 | 107 | 87 | 1680 | 0.69 | a NET< CL |
| 6 | 122.05 | 245.40 | 6829 | 207 | 102 | 2100 | 0.83 | b |
| 7 | 136.51 | 274.29 | 836 | 133 | 99 | 1968 | 0.81 | a |
| 8 | 165.86 | 332.97 | 722 | 127 | 95 | 1805 | 0.87 | a |
| 9 | 264.16 | 529.51 | 79 | 98 | 79 | 1401 | 0.60 | a NET< CL |
| 10 | 310.45 | 622.05 | 84 | 94 | 76 | 1281 | 0.62 | a |
| 11 | 345.57 | 692.27 | 44 | 120 | 98 | 1776 | 0.93 | a NET< CL |
| 12 | 391.54 | 784.16 | 123 | 122 | 98 | 1790 | 0.93 | a |
| 13 | 522.67 | 1046.34 | 65 | 71 | 57 | 792 | 0.67 | a |
| 14 | 661.54 | 1323.97 | 43873 | 432 | 87 | 1316 | 1.40 | a |
| 15 | 697.41 | 1395.69 | 72 | 87 | 70 | 964 | 1.13 | a |
| 16 | 936.64 | 1873.97 | 98 | 116 | 94 | 1830 | 1.29 | a |
| 17 | 1172.99 | 2346.48 | 35940 | 389 | 70 | 870 | 1.87 | a |
| 18 | 1332.13 | 2664.64 | 32403 | 363 | 35 | 229 | 2.01 | a |
| 19 | 1835.54 | 3671.08 | 76 | 36 | 25 | 96 | 2.89 | a |

040846D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET020528.BKG (0417010-32 Weekly Bkg)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-------|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

040846D02.SPC Analyzed by

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid*****
 Sample ID: 0413010-2A GEO 11 CAL VER (589)

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 07/01/2001 12:00:00 | Counting Start: | 06/01/2004 16:51:08 |
| Sampling Stop: | 07/01/2001 12:00:00 | Decay Time | 2.56e+004 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.00e+002 g | Real Time | 1850 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 040846D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: . . . ANALYTICAL.LIB (Analytical)

=====
 MEASURED or MDA CONCENTRATIONS
 =====

| Nuclide | N | | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|----------------------|--------------------------|-----------|-------------------|-------------------|
| | ENERGY (keV) | E T | | | | |
| Am-241 | 59.54 | | 1.00E+03 +- 1.35E+01 | 1.02E+01 | 5.05E+00 | 3.79E+06 |
| Cd-109 | 88.02 | | 1.49E+04 +- 1.92E+02 | 1.30E+02 | 6.45E+01 | 1.11E+04 |
| Co-57 | 122.07 | | 2.94E+02 +- 8.90E+00 | 8.90E+00 | 4.39E+00 | 6.50E+03 |
| Ce-139 | 165.85 | | 4.74E+02 +- 8.33E+01 | 1.26E+02 | 6.21E+01 | 3.30E+03 |
| Cs-137 | 661.62 | | 3.96E+02 +- 3.90E+00 | 1.60E+00 | 7.85E-01 | 2.64E+05 |
| Co-60 | Average:x | 6.12E+02 +- 4.76E+00 | | | | 4.62E+04 |
| | 1173.21 | 6.12E+02 +- 6.61E+00 | | 2.44E+00 | 1.20E+00 | 4.62E+04 |
| | 1332.48 | 6.13E+02 +- 6.86E+00 | | 1.38E+00 | 6.66E-01 | 4.62E+04 |
| Hg-203 | 279.18 | MDA | | 7.15E+06 | 3.53E+06 | 1.12E+03 |
| Sn-113 | 391.68 | MDA | | 6.58E+02r | 3.23E+02 | 2.76E+03 |
| Y-88 | 898.02 | MDA | | 2.17E+03 | 1.07E+03 | 2.56E+03 |

MEASURED TOTAL: 1.76E+04 +- 3.06E+02 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 3 | 98.84 | 199.00 | 21 | 67 | 55 | 830 | 0.39 | Deleted |
| 4 | 103.03 | 207.36 | 100 | 86 | 69 | 1173 | 0.41 | Unknown |
| 5 | 120.39 | 242.07 | 59 | 107 | 87 | 1680 | 0.69 | Deleted |
| 7 | 136.51 | 274.29 | 836 | 133 | 99 | 1968 | 0.81 | Unknown |
| 9 | 264.16 | 529.51 | 79 | 98 | 80 | 1401 | 0.60 | Deleted |

040846D02.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 10 | 310.45 | 622.05 | 84 | 94 | 76 | 1281 | 0.62 | 1332DEsc |
| 11 | 345.57 | 692.27 | 44 | 120 | 98 | 1776 | 0.93 | Deleted |
| 12 | 391.54 | 784.16 | 123 | 122 | 98 | 1790 | 0.93 | Unknown |
| 13 | 522.67 | 1046.34 | 65 | 71 | 57 | 792 | 0.67 | Unknown |
| 15 | 697.41 | 1395.69 | 72 | 87 | 70 | 964 | 1.13 | Unknown |
| 16 | 936.64 | 1873.97 | 98 | 116 | 94 | 1830 | 1.29 | Unknown |
| 19 | 1835.54 | 3671.08 | 76 | 36 | 25 | 96 | 2.89 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-3 GEO 11 EFF CAL (719)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 07/01/2003 12:00:00 | Counting Start: | 05/26/2004 12:09:55 |
| Sampling Stop: | 07/01/2003 12:00:00 | Decay Time | 7.92E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 3600 Sec |
| Sample Size | 1.00E+002 g | Real Time | 3759 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040787D03.SPC |

Detector #: 3 (Detector 3)
 Energy(keV) = -0.86 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 05/26/2004
 FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.50 | 120.64 | 76566 | 697 | 349 | 22471 | 0.94 | a |
| 2 | 87.98 | 177.55 | 188017 | 957 | 332 | 20392 | 0.97 | a |
| 3 | 122.08 | 245.71 | 96945 | 695 | 253 | 11870 | 0.99 | a HiResid |
| 4 | 136.52 | 274.57 | 12597 | 352 | 223 | 9159 | 1.06 | a |
| 5 | 165.92 | 333.34 | 57249 | 562 | 242 | 9970 | 1.12 | a |
| 6 | 255.27 | 511.91 | 1479 | 258 | 202 | 8066 | 1.09 | a |
| 7 | 279.23 | 559.79 | 3449 | 262 | 193 | 7326 | 1.15 | a |
| 8 | 310.30 | 621.89 | 243 | 271 | 222 | 8537 | 1.39 | a |
| 9 | 391.77 | 784.72 | 31097 | 435 | 210 | 7641 | 1.40 | a |
| 10 | 510.97 | 1022.94 | 539 | 263 | 213 | 7066 | 1.83 | a |
| 11 | 661.69 | 1324.17 | 89205 | 635 | 177 | 5804 | 1.70 | a HiResid |
| 12 | 812.30 | 1625.18 | 271 | 206 | 168 | 5411 | 1.83 | a |
| 13 | 814.00 | 1628.57 | 453 | 221 | 179 | 5903 | 1.90 | b |
| 14 | 821.09 | 1642.74 | 211 | 233 | 190 | 6395 | 2.09 | c |
| 15 | 898.04 | 1796.53 | 30225 | 422 | 197 | 7187 | 2.04 | a HiResid |
| 16 | 1173.17 | 2346.40 | 88912 | 623 | 148 | 3738 | 2.33 | a HiResid |
| 17 | 1332.33 | 2664.50 | 79117 | 584 | 127 | 2668 | 2.48 | a HiResid |
| 18 | 1835.67 | 3670.47 | 17090 | 273 | 63 | 573 | 3.10 | a HiResid |

040787D03.SPC Analyzed by

SEEKER

C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413010-3 GEO 11 EFF CAL (719)

Stds. Match Tolerance: 2.00 keV

Detector Number: 03 Calibration Date. . . 05/26/2004 12:09:55

Geometry File (D03) (Sh11).EFF ID. Geo 11 Eff Cal

Amount of Std. in Calib. Source: 100.000000 gm

$$\text{Eff} = 1 / [2.98e-03 * \text{En}^{-3.47e+00} + 7.49e+01 * \text{En}^{8.79e-01}]$$

(Where En = Energy in MeV) (Exponential)

| Pk. # | Energy (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|----------|-----------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 1.62e-02 | 2.65 | 1.67e-02 | 0.17 | 1.67e-02 |
| 2 | 88.04 | 4.57e-02 | -3.36 | 4.42e-02 | -1.12 | 4.37e-02 |
| 3 | 122.06 | 6.01e-02 | 2.56 | 6.17e-02 | -1.16 | 6.10e-02 |
| 4 | 165.85 | 5.87e-02 | 0.59 | 5.90e-02 | -0.79 | 5.85e-02 |
| 5 | 391.68 | 3.19e-02 | -5.09 | 3.04e-02 | -0.39 | 3.03e-02 |
| 6 | 661.64 | 1.99e-02 | -3.81 | 1.92e-02 | -0.33 | 1.91e-02 |
| 7 | 898.02 | 1.41e-02 | 4.12 | 1.47e-02 | -0.31 | 1.46e-02 |
| 8 | 1173.21 | 1.15e-02 | 0.86 | 1.16e-02 | -0.29 | 1.16e-02 |
| 9 | 1332.48 | 1.01e-02 | 2.34 | 1.04e-02 | -0.28 | 1.03e-02 |
| 10 | 1836.01 | 7.62e-03 | 2.62 | 7.83e-03 | -0.26 | 7.81e-03 |

Calibration Results Saved.

*279 keV PHOTOPeAK DELETED DUE TO
 MORE THAN 5 HALF-LIVES EXPIRED.
 CHANGE O.K. PER S.O.P. 713.
 MC 5-26-04

Efficiency Calibration VerificationGeo. 11 Std # 589
Det. # 3

| FROM CALIBRATION CERTIFICATE | | | |
|------------------------------|------|--------------|-------------|
| Isotope | KeV | Half Life(y) | Gammas/Sec. |
| Am-241 | 59.9 | 432.0000 | 1345 |
| Cd-109 | 88 | 1.2666 | 1881 |
| Co-57 | 122 | 0.7441 | 1030 |
| Ce-139 | 166 | 0.3768 | 1402 |
| Hg-203 | 279 | 0.1276 | 2980 |
| Sn-113 | 392 | 0.3151 | 1860 |
| Cs-137 | 662 | 30.0000 | 1205 |
| Y-88 | 898 | 0.2919 | 4932 |
| Co-60 | 1173 | 5.2714 | 2360 |
| Co-60 | 1332 | 5.2714 | 2381 |
| Y-88 | 1836 | 0.2919 | 5162 |
| | | | 0.9938 |

| FROM ANALYTICS.LIB | | | | EXPECTED ACTIVITY | | | | MEASURED ACTIVITY | | | |
|--------------------|--|------|-------------|-------------------|---------|---------|---------------|-------------------|--------|------------|--------|
| | | Mass | of Standard | | DPS | pCi/g | | | pCi/g | % Recovery | Pass ? |
| | | 100 | g | Am-241 | 3746.5 | 1012.6 | | 1010 | 99.7% | Pass | |
| | | | | Cd-109 | 52105.3 | 14082.5 | | 14900 | 105.8% | Pass | |
| | | | | Co-57 | 1204.5 | 325.6 | | 322 | 98.9% | Pass | |
| | | | | Ce-139 | 1744.9 | 471.6 | >5 Halflives | >5 Halflives | >5 | Halflives | |
| | | | | Hg-203 | 3855.1 | 1041.9 | >5 Halflives | >5 Halflives | >5 | Halflives | |
| | | | | Sn-113 | 2865.9 | 774.6 | >5 Halflives | >5 Halflives | >5 | Halflives | |
| | | | | Cs-137 | 1415.6 | 382.6 | | 388 | 101.4% | Pass | |
| | | | | Y-88 | 5280.5 | 1427.2 | > 5 Halflives | > 5 Halflives | > 5 | Halflives | |
| | | | | Co-60 | 2360.0 | 637.8 | | 606 | 95.0% | Pass | |
| | | | | Co-60 | 2381.0 | 643.5 | | 609 | 94.6% | Pass | |
| | | | | Y-88 | 5194.2 | 1403.8 | > 5 Halflives | > 5 Halflives | > 5 | Halflives | |

*****SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4*****

Paragon Analytics, Div. of DataChem Lab
GammaScan

*****Geo.11 / Solid*****

Sample ID: 0413010-3A GEO 11 CAL VER (589)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 07/01/2001 12:00:00 | Counting Start: | 06/01/2004 15:24:06 |
| Sampling Stop: | 07/01/2001 12:00:00 | Decay Time | 2.56E+004 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.00E+002 g | Real Time | 1932 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040821D03.SPC |

Detector #: 3 (Detector 3)

Energy(keV) = -0.89 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/01/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.48 | 120.69 | 39984 | 462 | 191 | 6710 | 0.91 | a |
| 2 | 87.96 | 177.61 | 32136 | 399 | 144 | 3824 | 0.94 | a |
| 3 | 122.04 | 245.76 | 7396 | 219 | 112 | 2303 | 1.02 | a |
| 4 | 136.48 | 274.63 | 838 | 132 | 98 | 1934 | 0.88 | a |
| 5 | 165.93 | 333.50 | 611 | 140 | 108 | 2145 | 0.93 | a |
| 6 | 391.90 | 785.26 | 92 | 85 | 68 | 1150 | 0.68 | a |
| 7 | 661.60 | 1324.42 | 39526 | 413 | 93 | 1587 | 1.69 | a HiResid |
| 8 | 897.85 | 1796.73 | 98 | 105 | 85 | 1593 | 1.37 | a |
| 9 | 1173.05 | 2346.89 | 31907 | 373 | 89 | 1343 | 2.29 | a HiResid |
| 10 | 1332.19 | 2665.05 | 28671 | 344 | 48 | 374 | 2.41 | a HiResid |
| 11 | 1836.12 | 3672.49 | 53 | 51 | 40 | 170 | 4.87 | a Wide Pk |

040821D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET030529.BKG (0417010-33 Weekly Bkg)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 2 | 87.96 | 32136 | 399 | 144 | 32134 | 399 | 144 | |
| 8 | 897.85 | 98 | 105 | 85 | 96 | 105 | 85 | |

040821D03.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0413010-3A GEO 11 CAL VER (589)

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 07/01/2001 12:00:00 | Counting Start: | 06/01/2004 15:24:06 |
| Sampling Stop: | 07/01/2001 12:00:00 | Decay Time | 2.56e+004 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.00e+002 g | Real Time | 1932 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 040821D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh11).EFF (Geo 11 Eff Cal)
Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: . . . ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|----------------------|--------------------------|-----------|-------------------|-------------------|
| | ENERGY (keV) | T | | | | |
| Am-241 | 59.54 | | 1.01E+03 +- 1.16E+01 | 9.66E+00 | 4.80E+00 | 3.79E+06 |
| Cd-109 | 88.02 | | 1.49E+04 +- 1.85E+02 | 1.34E+02 | 6.66E+01 | 1.11E+04 |
| Co-57 | 122.07 | | 3.22E+02 +- 9.53E+00 | 9.83E+00 | 4.85E+00 | 6.50E+03 |
| Ce-139 | 165.85 | | 4.14E+02 +- 9.50E+01 | 1.48E+02 | 7.31E+01 | 3.30E+03 |
| Cs-137 | 661.62 | | 3.88E+02 +- 4.05E+00 | 1.85E+00 | 9.09E-01 | 2.64E+05 |
| Co-60 | Average:x | 6.07E+02 +- 5.08E+00 | | | | 4.62E+04 |
| | 1173.21 | 6.06E+02 +- 7.09E+00 | | 3.42E+00 | 1.69E+00 | 4.62E+04 |
| | 1332.48 | 6.09E+02 +- 7.30E+00 | | 2.08E+00 | 1.01E+00 | 4.62E+04 |
| Hg-203 | 279.18 | MDA | | 7.72E+06 | 3.81E+06 | 1.12E+03 |
| Sn-113 | 391.68 | MDA | | 6.43E+02r | 3.15E+02 | 2.76E+03 |
| Y-88 | 898.02 | MDA | | 1.59E+03r | 7.82E+02 | 2.56E+03 |

MEASURED TOTAL: 1.76E+04 +- 3.10E+02 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-----|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 4 | 136.48 | 274.63 | 838 | 132 | 98 | 1934 | 0.88 | Unknown |
| 6 | 391.90 | 785.26 | 92 | 85 | 68 | 1150 | 0.68 | Unknown |
| 8 | 897.85 | 1796.73 | 96 | 105 | 85 | 1593 | 1.37 | Unknown |
| 11 | 1836.12 | 3672.49 | 53 | 51 | 40 | 170 | 4.87 | Unknown |

000443

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-4 Geo 11 Eff Cal (719)

 Sampling Start: 07/01/2003 12:00:00 | Counting Start: 06/21/2004 13:26:54
 Sampling Stop: 07/01/2003 12:00:00 | Decay Time. 8.55E+003 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 3600 Sec
 Sample Size 1.00E+002 g | Real Time 3899 Sec
 Collection Efficiency 1.0000 | Spc. File 041081D04.SPC

Detector #: 4 (Detector 4)

Energy(keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/21/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

 Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

 ======

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.50 | 121.26 | 84257 | 683 | 296 | 17616 | 0.74 | a |
| 2 | 87.96 | 178.15 | 193064 | 953 | 303 | 18547 | 0.74 | a HiResid |
| 3 | 122.05 | 246.27 | 98536 | 681 | 218 | 9543 | 0.81 | a HiResid |
| 4 | 136.48 | 275.12 | 12418 | 323 | 192 | 7450 | 0.85 | a |
| 5 | 165.83 | 333.77 | 54895 | 533 | 209 | 8086 | 0.90 | a |
| 6 | 255.15 | 512.27 | 1198 | 245 | 193 | 6886 | 0.97 | a |
| 7 | 279.19 | 560.31 | 2758 | 273 | 207 | 7309 | 1.09 | a |
| 8 | 391.73 | 785.24 | 28791 | 407 | 185 | 5860 | 1.19 | a |
| 9 | 511.16 | 1023.92 | 641 | 284 | 230 | 7797 | 1.97 | a |
| 10 | 661.73 | 1324.84 | 98205 | 660 | 169 | 4988 | 1.52 | a HiResid |
| 11 | 813.74 | 1628.62 | 377 | 189 | 152 | 4497 | 1.48 | a |
| 12 | 898.14 | 1797.31 | 28044 | 409 | 193 | 6545 | 1.77 | a |
| 13 | 1032.77 | 2066.36 | 147 | 214 | 175 | 5653 | 1.91 | a NET< CL |
| 14 | 1052.31 | 2105.42 | 124 | 157 | 128 | 3627 | 1.38 | a NET< CL |
| 15 | 1060.61 | 2122.00 | 143 | 157 | 128 | 3627 | 1.36 | b |
| 16 | 1114.42 | 2229.54 | 409 | 180 | 144 | 4200 | 1.62 | a |
| 17 | 1118.38 | 2237.45 | 24 | 123 | 101 | 2520 | 1.02 | b NET< CL |
| 18 | 1173.35 | 2347.32 | 96710 | 644 | 138 | 3354 | 2.08 | a HiResid |
| 19 | 1325.89 | 2652.18 | 1033 | 237 | 188 | 3249 | 5.91 | a HiResid |
| | | | | | | | | Wide Pk |
| 20 | 1332.55 | 2665.49 | 87777 | 602 | 86 | 1264 | 2.32 | b HiResid |
| 21 | 1836.03 | 3671.69 | 16098 | 263 | 56 | 465 | 2.92 | a HiResid |

041081D04.SPC Analyzed by

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4
*****Sample ID: 0413010-4 Geo 11 Eff Cal (719)
Stds. Match Tolerance: 2.00 keV-----
Detector Number: 04 Calibration Date. . . 06/21/2004 13:26:54

Geometry File (D04)(Sh11).EFF ID. Geo 11 Eff Cal

Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [4.98e-03*En^(-3.26e+00) + 6.77e+01*En^ 8.96e-01]
(Where En = Energy in MeV)) (Exponential)

| Pk. # | Energy (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|----------|-----------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 1.79e-02 | 3.20 | 1.84e-02 | -0.47 | 1.84e-02 |
| 2 | 88.04 | 4.88e-02 | -3.92 | 4.69e-02 | 0.94 | 4.74e-02 |
| 3 | 122.06 | 6.53e-02 | 2.12 | 6.67e-02 | -0.05 | 6.67e-02 |
| 4 | 165.85 | 6.41e-02 | 2.07 | 6.55e-02 | -1.14 | 6.48e-02 |
| 5 | 279.00 | 4.75e-02 | -4.01 | 4.57e-02 | -1.35 | 4.51e-02 |
| 6 | 391.68 | 3.46e-02 | -1.47 | 3.41e-02 | -0.96 | 3.38e-02 |
| 7 | 661.64 | 2.20e-02 | -2.81 | 2.14e-02 | -0.17 | 2.13e-02 |
| 8 | 898.02 | 1.55e-02 | 4.91 | 1.63e-02 | 0.30 | 1.63e-02 |
| 9 | 1173.21 | 1.26e-02 | 1.35 | 1.28e-02 | 0.73 | 1.29e-02 |
| 10 | 1332.48 | 1.14e-02 | 0.68 | 1.14e-02 | 0.93 | 1.15e-02 |
| 11 | 1836.01 | 8.51e-03 | 0.81 | 8.58e-03 | 1.43 | 8.70e-03 |

Calibration Results Saved.

Efficiency Calibration Verification

Geo. 11 Std # 589

Det. # 14
MC677/64

| FROM CALIBRATION CERTIFICATE | | | | FROM ANALYTICS LIB | | | | EXPECTED ACTIVITY | | | | MEASURED ACTIVITY | | | |
|------------------------------|------|--------------|-------------|--------------------|------------------|---------|--------|-------------------|-------------|-------------|-------------|-------------------|--|--|--|
| Isotope | KeV | Half Life(y) | Gammas/Sec. | Gamma Fraction: | Mass of Standard | g | DPS | pCi/g | pCi/g | % Recovery | Pass ? | | | | |
| Am-241 | 59.9 | 432.0000 | 1345 | 0.3590 | 100 | g | Am-241 | 3746.5 | 1012.6 | 100.7% | Pass | | | | |
| Cd-109 | 88 | 1.26666 | 1881 | 0.0361 | 52105.3 | 14082.5 | Cd-109 | 15100 | 107.2% | Pass | | | | | |
| Co-57 | 122 | 0.7441 | 1030 | 0.8551 | 1204.5 | 325.6 | Co-57 | 319 | 98.0% | Pass | | | | | |
| Ce-139 | 166 | 0.3768 | 1402 | 0.8035 | 1744.9 | 471.6 | Ce-139 | >5 Halfives | >5 Halfives | >5 Halfives | >5 Halfives | | | | |
| Hg-203 | 279 | 0.1276 | 2980 | 0.7730 | 3855.1 | 1041.9 | Hg-203 | >5 Halfives | >5 Halfives | >5 Halfives | >5 Halfives | | | | |
| Sn-113 | 392 | 0.3151 | 1860 | 0.6490 | 2865.9 | 774.6 | Sn-113 | >5 Halfives | >5 Halfives | >5 Halfives | >5 Halfives | | | | |
| Cs-137 | 662 | 30.0000 | 1205 | 0.8512 | 1415.6 | 382.6 | Cs-137 | 402 | 105.1% | Pass | | | | | |
| Y-88 | 898 | 0.2919 | 4932 | 0.9340 | 5280.5 | 1427.2 | Y-88 | >5 Halfives | >5 Halfives | >5 Halfives | >5 Halfives | | | | |
| Co-60 | 1173 | 5.2714 | 2360 | 1.0000 | 2360.0 | 637.8 | Co-60 | 633 | 99.2% | Pass | | | | | |
| Co-60 | 1332 | 5.2714 | 2381 | 1.0000 | 2381.0 | 643.5 | Co-60 | 626 | 97.3% | Pass | | | | | |
| Y-88 | 1836 | 0.2919 | 5162 | 0.9938 | 5194.2 | 1403.8 | Y-88 | >5 Halfives | >5 Halfives | >5 Halfives | >5 Halfives | | | | |

000446

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-4A Geo 11 Cal Ver (589)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 07/01/2001 12:00:00 | Counting Start: | 06/21/2004 14:34:58 |
| Sampling Stop: | 07/01/2001 12:00:00 | Decay Time | 2.61E+004 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.00E+002 g | Real Time | 1869 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041082D04.SPC |

Detector #: 4 (Detector 4)

Energy(keV) = -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/21/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.48 | 121.24 | 44687 | 461 | 152 | 5127 | 0.73 | a |
| 2 | 73.55 | 149.34 | 104 | 90 | 72 | 1432 | 0.39 | a |
| 3 | 87.95 | 178.14 | 33701 | 399 | 129 | 3370 | 0.74 | a HiResid |
| 4 | 98.72 | 199.65 | 85 | 70 | 56 | 857 | 0.40 | a |
| 5 | 122.05 | 246.27 | 7543 | 214 | 102 | 2116 | 0.81 | a |
| 6 | 136.47 | 275.10 | 1066 | 136 | 99 | 1956 | 0.87 | a |
| 7 | 150.43 | 303.00 | 12 | 84 | 69 | 1174 | 0.42 | a NET< CL |
| 8 | 165.83 | 333.76 | 668 | 128 | 97 | 1878 | 0.78 | a |
| 9 | 310.52 | 622.93 | 153 | 112 | 90 | 1618 | 0.88 | a |
| 10 | 322.64 | 647.16 | 83 | 123 | 100 | 1858 | 1.05 | a NET< CL |
| 11 | 336.81 | 675.47 | 79 | 76 | 61 | 916 | 0.54 | a |
| 12 | 415.51 | 832.77 | 126 | 115 | 92 | 1806 | 0.98 | a |
| 13 | 511.42 | 1024.43 | 76 | 97 | 78 | 1295 | 1.06 | a NET< CL |
| 14 | 616.10 | 1233.65 | 75 | 95 | 77 | 1160 | 1.10 | a NET< CL |
| 15 | 661.70 | 1324.78 | 45579 | 441 | 90 | 1413 | 1.52 | a |
| 16 | 843.88 | 1688.87 | 84 | 84 | 67 | 1046 | 0.90 | a |
| 17 | 1114.87 | 2230.44 | 81 | 82 | 66 | 1017 | 1.07 | a |
| 18 | 1173.33 | 2347.29 | 36507 | 394 | 78 | 1081 | 2.14 | a HiResid |
| 19 | 1332.51 | 2665.41 | 32236 | 363 | 44 | 335 | 2.24 | a HiResid |
| 20 | 1835.92 | 3671.47 | 43 | 38 | 29 | 124 | 3.09 | a |

041082D04.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET040618.BKG (0418003-24 Weekly Background)

Bkg.File Detector #: 4

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 2 | 73.55 | 104 | 90 | 72 | 101 | 90 | 72 | |
| 7 | 150.43 | 12 | 84 | 69 | 11 | 84 | 69 | NET<CL |
| 13 | 511.42 | 76 | 97 | 78 | 34 | 97 | 79 | NET<CL |

041082D04.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo.11 / Solid

Sample ID: 0413010-4A Geo 11 Cal Ver (589)

Sampling Start: 07/01/2001 12:00:00 | Counting Start: 06/21/2004 14:34:58
Sampling Stop: 07/01/2001 12:00:00 | Decay Time. 2.61e+004 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 1.00e+002 g | Real Time 1869 Sec
Collection Efficiency 1.0000 | Spectrum File 041082D04.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04) (Sh11).EFF (Geo 11 Eff Cal)
Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: ANALYTICAL.LIB (Analytical)

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|--------------|-----|-----------------------|-------------|----------|----------------|----------------|
| Am-241 | | 59.54 | | 1.02E+03 | +- 1.05E+01 | 6.98E+00 | 3.46E+00 | 3.79E+06 |
| Cd-109 | | 88.02 | | 1.51E+04 | +- 1.79E+02 | 1.17E+02 | 5.80E+01 | 1.11E+04 |
| Co-57 | | 122.07 | | 3.19E+02 | +- 9.04E+00 | 8.78E+00 | 4.33E+00 | 6.50E+03 |
| Ce-139 | | 165.85 | | 4.52E+02 | +- 8.67E+01 | 1.32E+02 | 6.52E+01 | 3.30E+03 |
| Cs-137 | | 661.62 | | 4.02E+02 | +- 3.89E+00 | 1.61E+00 | 7.95E-01 | 2.64E+05 |
| Co-60 | Average:x | 6.30E+02 | | 4.91E+00 | | | | 4.62E+04 |
| | | 1173.21 | | 6.33E+02 | +- 6.83E+00 | 2.75E+00 | 1.35E+00 | 4.62E+04 |
| | | 1332.48 | | 6.26E+02 | +- 7.05E+00 | 1.77E+00 | 8.61E-01 | 4.62E+04 |
| Hg-203 | | 279.18 | | MDA | | 8.76E+06 | 4.33E+06 | 1.12E+03 |
| Sn-113 | | 391.68 | | MDA | | 1.07E+03 | 5.30E+02 | 2.76E+03 |
| Y-88 | | 898.02 | | MDA | | 2.71E+03 | 1.34E+03 | 2.56E+03 |

MEASURED TOTAL: 1.79E+04 +- 2.94E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|------------|---------------|-------------|------------|------------|----------|
| 2 | 73.55 | 149.34 | 101 | 90 | 72 | 1432 | 0.39 | Unknown |
| 4 | 98.72 | 199.65 | 85 | 70 | 56 | 857 | 0.40 | Unknown |
| 6 | 136.47 | 275.10 | 1066 | 136 | 99 | 1956 | 0.87 | Unknown |
| 7 | 150.43 | 303.00 | 11 | 84 | 69 | 1174 | 0.42 | Deleted |
| 9 | 310.52 | 622.93 | 153 | 112 | 90 | 1618 | 0.88 | 1333DEsc |

041082D04.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 10 | 322.64 | 647.16 | 83 | 123 | 100 | 1858 | 1.05 | Deleted |
| 11 | 336.81 | 675.47 | 79 | 76 | 61 | 916 | 0.54 | Unknown |
| 12 | 415.51 | 832.77 | 126 | 115 | 92 | 1806 | 0.98 | Unknown |
| 13 | 511.42 | 1024.43 | 34 | 97 | 79 | 1295 | 1.06 | Deleted |
| 14 | 616.10 | 1233.65 | 75 | 95 | 77 | 1160 | 1.10 | Deleted |
| 16 | 843.88 | 1688.87 | 84 | 84 | 67 | 1046 | 0.90 | Unknown |
| 17 | 1114.87 | 2230.44 | 81 | 82 | 66 | 1017 | 1.07 | Unknown |
| 20 | 1835.92 | 3671.47 | 43 | 38 | 29 | 124 | 3.09 | Unknown |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Inc.
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-7 GEO 11 CALIB. (719)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 07/01/2003 12:00:00 | Counting Start: | 01/02/2004 13:19:50 |
| Sampling Stop: | 07/01/2003 12:00:00 | Decay Time | 4.44E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 5400 Sec |
| Sample Size | 1.00E+002 g | Real Time | 6174 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040006D07.SPC |

Detector #: 7 (Detector 7)

Energy(keV) = -2.01 + 0.501*Ch + 2.77E-07*Ch^2 +-1.77E-11*Ch^3 01/02/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 59.52 | 122.88 | 442320 | 1455 | 486 | 47523 | 0.85 | a |
| 2 | 66.79 | 137.39 | 20155 | 997 | 786 | 68455 | 2.24 | a HiResid Wide Pk |
| 3 | 70.55 | 144.92 | 25125 | 897 | 690 | 58676 | 2.02 | b HiResid |
| 4 | 72.80 | 149.40 | 20996 | 778 | 594 | 48897 | 1.63 | c HiResid |
| 5 | 74.86 | 153.51 | 14602 | 873 | 690 | 58676 | 1.92 | d HiResid |
| 6 | 78.13 | 160.04 | 22155 | 1112 | 881 | 78235 | 2.59 | e HiResid |
| 7 | 82.43 | 168.63 | 22173 | 1001 | 786 | 68455 | 2.21 | f HiResid |
| 8 | 84.83 | 173.43 | 23290 | 948 | 738 | 63566 | 2.17 | g HiResid |
| 9 | 87.90 | 179.55 | 521030 | 1523 | 398 | 29338 | 1.04 | h HiResid |
| 10 | 109.61 | 222.90 | 501 | 399 | 326 | 21483 | 0.88 | a |
| 11 | 122.00 | 247.64 | 218772 | 1022 | 338 | 21049 | 0.92 | a HiResid |
| 12 | 136.39 | 276.38 | 26107 | 493 | 307 | 17358 | 0.94 | a |
| 13 | 165.79 | 335.07 | 155533 | 859 | 279 | 14405 | 0.97 | a |
| 14 | 199.07 | 401.52 | 4158 | 318 | 239 | 11489 | 0.86 | a |
| 15 | 203.71 | 410.78 | 1118 | 339 | 273 | 13787 | 0.99 | b |
| 16 | 254.98 | 513.13 | 3979 | 324 | 245 | 11127 | 1.00 | a |
| 17 | 279.09 | 561.24 | 38208 | 503 | 260 | 11571 | 1.07 | a |
| 18 | 309.78 | 622.51 | 271 | 295 | 241 | 9913 | 1.12 | a HiResid |
| 19 | 391.58 | 785.77 | 88022 | 654 | 226 | 8707 | 1.19 | a |
| 20 | 428.14 | 858.71 | 181 | 227 | 186 | 7270 | 0.95 | a NET< CL |
| 21 | 511.16 | 1024.37 | 1396 | 396 | 320 | 13773 | 2.23 | a Wide Pk |
| 22 | 619.22 | 1239.95 | 170 | 196 | 159 | 5365 | 0.92 | a |
| 23 | 661.62 | 1324.51 | 104345 | 700 | 222 | 8547 | 1.43 | a |

040006D07.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 24 | 683.59 | 1368.35 | 177 | 207 | 169 | 6018 | 0.96 | a |
| 25 | 813.97 | 1628.37 | 1831 | 249 | 192 | 6806 | 1.64 | a |
| 26 | 897.95 | 1795.82 | 90194 | 652 | 210 | 8111 | 1.62 | a HiResid |
| 27 | 1173.19 | 2344.53 | 108612 | 683 | 148 | 3848 | 1.86 | a HiResid |
| 28 | 1194.73 | 2387.45 | 308 | 220 | 179 | 4879 | 2.75 | a |
| 29 | 1325.14 | 2647.37 | 2128 | 225 | 169 | 3833 | 3.37 | a HiResid |
| | | | | | | | | Wide Pk |
| 30 | 1332.41 | 2661.86 | 97803 | 639 | 109 | 2190 | 1.99 | b HiResid |
| 31 | 1353.67 | 2704.22 | 164 | 132 | 106 | 2091 | 1.90 | a |
| 32 | 1835.81 | 3664.80 | 50913 | 457 | 61 | 610 | 2.41 | a HiResid |
| 33 | 1850.49 | 3694.04 | 103 | 79 | 63 | 621 | 2.58 | a |

040006D07.SPC Analyzed by

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413010-7 GEO 11 CALIB. (719)

Stds. Match Tolerance: 2.00 keV

Detector Number: 07 Calibration Date. . . 01/02/2004 13:19:50

Geometry File (D07)(Sh11).EFF ID. Geo 11 Eff Cal

Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [1.41e-01*En^-1.49e+00 + 9.67e+01*En^ 9.61e-01]
(Where En = Energy in MeV)) (Exponential)

| Pk. | Energy # (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|-----|-------------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 6.24e-02 | 0.01 | 6.24e-02 | -5.30 | 5.93e-02 |
| 2 | 88.04 | 6.79e-02 | 0.09 | 6.80e-02 | -8.10 | 6.29e-02 |
| 3 | 122.06 | 6.25e-02 | -0.63 | 6.21e-02 | -7.33 | 5.79e-02 |
| 4 | 165.85 | 5.12e-02 | 1.22 | 5.18e-02 | -5.68 | 4.91e-02 |
| 5 | 279.00 | 3.45e-02 | -1.21 | 3.41e-02 | -3.42 | 3.30e-02 |
| 6 | 391.68 | 2.52e-02 | -0.42 | 2.51e-02 | -2.65 | 2.44e-02 |
| 7 | 661.64 | 1.54e-02 | -0.62 | 1.53e-02 | -2.21 | 1.50e-02 |
| 8 | 898.02 | 1.09e-02 | 4.57 | 1.14e-02 | -2.18 | 1.12e-02 |
| 9 | 1173.21 | 8.89e-03 | -0.41 | 8.86e-03 | -2.23 | 8.66e-03 |
| 10 | 1332.48 | 7.93e-03 | -1.11 | 7.84e-03 | -2.27 | 7.67e-03 |
| 11 | 1836.01 | 5.90e-03 | -2.36 | 5.76e-03 | -2.40 | 5.63e-03 |

Calibration Results Saved.

Efficiency Calibration Verification

Geo. 11 Std # 589
Det. # 7

| FROM CALIBRATION CERTIFICATE | | | |
|------------------------------|------|--------------|--------------|
| Isotope | Kev | Half Life(Y) | Gamma's/Sec. |
| Am-241 | 59.9 | 432.0000 | 1345 |
| Cd-109 | 88 | 1.2666 | 1881 |
| Co-57 | 122 | 0.7441 | 1030 |
| Ce-139 | 166 | 0.3768 | 1402 |
| Hg-203 | 279 | 0.1276 | 3590 |
| Sn-113 | 392 | 0.3151 | 1860 |
| Cs-137 | 662 | 30.0000 | 1205 |
| Y-88 | 898 | 0.2919 | 4532 |
| Co-60 | 1173 | 5.2714 | 2330 |
| Co-60 | 1332 | 5.2714 | 2336 |
| Y-88 | 1836 | 0.2919 | 5162 |

| FROM ANALYTICS LIB | | | |
|--------------------|---------|----------|--------------|
| | Mass | Standard | 100 |
| Gamma Fraction: | 0.3590 | 0.0361 | 0.8551 |
| Am-241 | 3746.5 | 1012.6 | 1030 |
| Cd-109 | 52105.3 | 14082.5 | 13500 |
| Co-57 | 1204.5 | 325.6 | 331 |
| Ce-139 | 1744.9 | 471.6 | 470 |
| Hg-203 | 3855.1 | 1041.9 | 1041.9 |
| Sn-113 | 2865.9 | 774.6 | > 5 Halfives |
| Cs-137 | 1415.6 | 382.6 | > 5 Halfives |
| Y-88 | 5280.5 | 1427.2 | > 5 Halfives |
| Co-60 | 2360.0 | 637.8 | 620 |
| Co-60 | 2381.0 | 643.5 | 342 |
| Y-88 | 5194.2 | 1403.8 | > 5 Halfives |

| EXPECTED ACTIVITY | | | |
|-------------------|---------|---------|--------------|
| | DPS | pCi/g | pCi/g |
| Am-241 | 3746.5 | 1012.6 | 101.7% |
| Cd-109 | 52105.3 | 14082.5 | 95.9% |
| Co-57 | 1204.5 | 325.6 | 101.7% |
| Ce-139 | 1744.9 | 471.6 | 99.7% |
| Hg-203 | 3855.1 | 1041.9 | > 5 Halfives |
| Sn-113 | 2865.9 | 774.6 | > 5 Halfives |
| Cs-137 | 1415.6 | 382.6 | 100.6% |
| Y-88 | 5280.5 | 1427.2 | > 5 Halfives |
| Co-60 | 2360.0 | 637.8 | 98.6% |
| Co-60 | 2381.0 | 643.5 | 99.8% |
| Y-88 | 5194.2 | 1403.8 | > 5 Halfives |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

Geo.11 / Solid

Sample ID: 0413010-S7 GEO 11 CAL VER (589)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 07/01/2001 12:00:00 | Counting Start: | 02/02/2004 12:46:21 |
| Sampling Stop: | 07/01/2001 12:00:00 | Decay Time | 2.27E+004 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.00E+002 g | Real Time | 1898 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040188D07.SPC |

Detector #: 7 (Detector 7)

Energy(keV) = -2.04 + 0.501*Ch + 1.33E-08*Ch^2 + 4.60E-11*Ch^3 02/02/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.47 | 122.81 | 153859 | 831 | 226 | 10265 | 0.85 | a |
| 2 | 87.97 | 179.72 | 53832 | 490 | 128 | 3318 | 0.86 | a |
| 3 | 98.84 | 201.40 | 92 | 82 | 66 | 1057 | 0.45 | a |
| 4 | 102.51 | 208.73 | 116 | 132 | 107 | 2114 | 1.05 | b |
| 5 | 121.93 | 247.51 | 10418 | 239 | 102 | 1920 | 0.93 | a |
| 6 | 136.35 | 276.29 | 1126 | 126 | 88 | 1553 | 0.82 | a |
| 7 | 165.73 | 334.95 | 1113 | 134 | 95 | 1679 | 1.04 | a |
| 8 | 258.90 | 520.94 | 87 | 101 | 82 | 1353 | 0.83 | a |
| 9 | 262.48 | 528.10 | 86 | 101 | 82 | 1353 | 0.88 | b |
| 10 | 377.74 | 758.17 | 47 | 93 | 76 | 1158 | 0.87 | a NET< CL |
| 11 | 381.69 | 766.05 | 50 | 80 | 65 | 927 | 0.71 | b NET< CL |
| 12 | 391.41 | 785.44 | 260 | 122 | 97 | 1597 | 1.13 | a |
| 13 | 661.19 | 1323.86 | 31524 | 368 | 80 | 1124 | 1.43 | a |
| 14 | 819.99 | 1640.67 | 76 | 81 | 65 | 923 | 1.07 | a |
| 15 | 896.91 | 1794.10 | 171 | 100 | 79 | 1284 | 1.37 | a |
| 16 | 1172.41 | 2343.41 | 26385 | 333 | 60 | 631 | 1.85 | a |
| 17 | 1331.57 | 2660.57 | 23830 | 311 | 28 | 145 | 1.99 | a |
| 18 | 1835.35 | 3663.37 | 107 | 26 | 13 | 35 | 1.78 | a |

040188D07.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Inc.
GammaScan

Background File: DET070130.BKG (0413012-47 Weekly Bkg.)

Bkg.File Detector #: 7
=====

BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 1 | 59.47 | 153859 | 831 | 226 | 153858 | 831 | 226 | |
| 2 | 87.97 | 53832 | 490 | 128 | 53831 | 490 | 128 | |

040188D07.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
GammaScan

Geo.11 / Solid

Sample ID: 0413010-S7 GEO 11 CAL VER (589)

Sampling Start: 07/01/2001 12:00:00 | Counting Start: 02/02/2004 12:46:21
Sampling Stop: 07/01/2001 12:00:00 | Decay Time. 2.27e+004 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 1.00e+002 g | Real Time 1898 Sec
Collection Efficiency 1.0000 | Spectrum File 040188D07.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 7 (Detector 7)
Efficiency File: (D07) (Sh11).EFF (Geo 11 Eff Cal)
Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: ANALYTICAL.LIB (Analytical)

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------------|--------|--------------------------|-----------|-------------------|-------------------|
| Am-241 | 59.54 | | 1.03E+03 +- 5.59E+00 | 3.05E+00 | 1.52E+00 | 3.79E+06 |
| Cd-109 | 88.02 | | 1.35E+04 +- 1.23E+02 | 6.52E+01 | 3.23E+01 | 1.11E+04 |
| Co-57 | 122.07 | | 3.31E+02 +- 7.59E+00 | 6.56E+00 | 3.24E+00 | 6.50E+03 |
| Ce-139 | 165.85 | | 4.70E+02 +- 5.64E+01 | 8.16E+01 | 4.02E+01 | 3.30E+03 |
| Cs-137 | 661.62 | | 3.85E+02 +- 4.50E+00 | 2.00E+00 | 9.82E-01 | 2.64E+05 |
| Co-60 | Average:x | | 6.35E+02 +- 5.76E+00 | | | 4.62E+04 |
| | 1173.21 | | 6.29E+02 +- 7.94E+00 | 2.92E+00 | 1.43E+00 | 4.62E+04 |
| | 1332.48 | | 6.42E+02 +- 8.36E+00 | 1.58E+00 | 7.54E-01 | 4.62E+04 |
| Hg-203 | 279.18 | | MDA | | 1.31E+06 | 6.43E+05 |
| Sn-113 | 391.68 | | MDA | | 3.79E+02r | 1.86E+02 |
| Y-88 | 898.02 | | MDA | | 8.11E+02r | 3.96E+02 |

MEASURED TOTAL: 1.64E+04 +- 2.03E+02 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 3 | 98.84 | 201.40 | 92 | 82 | 66 | 1057 | 0.45 | Unknown |
| 4 | 102.51 | 208.73 | 116 | 132 | 107 | 2114 | 1.05 | Unknown |
| 6 | 136.35 | 276.29 | 1126 | 126 | 88 | 1553 | 0.82 | Unknown |
| 8 | 258.90 | 520.94 | 87 | 101 | 82 | 1353 | 0.83 | Unknown |
| 9 | 262.48 | 528.10 | 86 | 101 | 82 | 1353 | 0.88 | Unknown |

040188D07.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 10 | 377.74 | 758.17 | 47 | 93 | 76 | 1158 | 0.87 | Deleted |
| 11 | 381.69 | 766.05 | 50 | 80 | 65 | 927 | 0.71 | Deleted |
| 12 | 391.41 | 785.44 | 260 | 122 | 97 | 1597 | 1.13 | Unknown |
| 14 | 819.99 | 1640.67 | 76 | 81 | 65 | 923 | 1.07 | 1332SEsc |
| 15 | 896.91 | 1794.10 | 171 | 100 | 79 | 1284 | 1.37 | Unknown |
| 18 | 1835.35 | 3663.37 | 107 | 26 | 13 | 35 | 1.78 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo.11 / Solid

Sample ID: 0413010-10 GEO 11 EFF CAL (719)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 07/01/2003 12:00:00 | Counting Start: | 05/24/2004 14:10:41 |
| Sampling Stop: | 07/01/2003 12:00:00 | Decay Time | 7.87E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 3600 Sec |
| Sample Size | 1.00E+002 g | Real Time | 3921 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040758D10.SPC |

Detector #: 10 (Detector 10)

Energy(keV) = -1.25 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 05/24/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 50.10 | 102.52 | 22804 | 1301 | 1041 | 110481 | 3.40 | a HiResid Wide Pk |
| 2 | 56.13 | 114.57 | 42412 | 1430 | 1126 | 121003 | 3.81 | b HiResid |
| 3 | 59.36 | 121.02 | 358706 | 1331 | 477 | 42088 | 1.38 | c HiResid |
| 4 | 67.05 | 136.37 | 5632 | 894 | 725 | 73996 | 2.06 | a Wide Pk |
| 5 | 85.54 | 173.29 | 3192 | 822 | 670 | 73711 | 1.64 | a |
| 6 | 87.91 | 178.02 | 448028 | 1466 | 491 | 44595 | 1.35 | b |
| 7 | 103.13 | 208.42 | 626 | 491 | 402 | 28080 | 1.42 | a |
| 8 | 121.91 | 245.91 | 193450 | 997 | 385 | 25790 | 1.44 | a |
| 9 | 136.32 | 274.68 | 23794 | 504 | 328 | 18675 | 1.49 | a |
| 10 | 165.76 | 333.45 | 106250 | 778 | 349 | 20021 | 1.59 | a |
| 11 | 198.19 | 398.21 | 355 | 349 | 285 | 15036 | 1.25 | a |
| 12 | 255.09 | 511.81 | 2831 | 434 | 346 | 20092 | 1.96 | a |
| 13 | 279.19 | 559.94 | 7399 | 408 | 305 | 16320 | 1.79 | a |
| 14 | 391.72 | 784.61 | 67232 | 647 | 318 | 16202 | 2.07 | a HiResid |
| 15 | 511.19 | 1023.14 | 1608 | 385 | 310 | 15187 | 2.64 | a |
| 16 | 661.86 | 1323.96 | 220136 | 1015 | 319 | 15019 | 2.90 | a HiResid |
| 17 | 691.16 | 1382.47 | 340 | 340 | 278 | 12275 | 2.57 | a |
| 18 | 821.80 | 1643.31 | 252 | 254 | 207 | 8299 | 1.74 | a |
| 19 | 898.17 | 1795.77 | 74364 | 714 | 379 | 19329 | 3.41 | a HiResid |
| 20 | 958.70 | 1916.65 | 453 | 327 | 267 | 12599 | 2.09 | a |
| 21 | 1173.32 | 2345.15 | 222729 | 1014 | 304 | 11050 | 4.07 | a HiResid |
| 22 | 1332.49 | 2662.95 | 191895 | 956 | 314 | 11799 | 4.11 | a HiResid |
| 23 | 1835.45 | 3667.15 | 46608 | 477 | 167 | 2643 | 5.74 | a HiResid |

040758D10.SPC Analyzed by

 SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413010-10 GEO 11 EFF CAL (719)

Stds. Match Tolerance: 2.00 keV

Detector Number: 10 Calibration Date. . . 05/24/2004 14:10:41

Geometry File (D10)(Sh11).EFF ID. Geo 11 Eff Cal

Amount of Std. in Calib. Source: 100.000000 gm

Crossover: 180.00 keV

Below Crossover Efficiency Fit:

Eff = $10^{\log(\text{En})} [-6.88e+00 + 5.45e+00 \cdot \text{En} + -1.24e+00 \cdot \text{En}^2 + 0.00e+00 \cdot \text{En}^3]$
 (Where En = LOG(Energy in keV)) (Polynomial)

Above Knee Efficiency Fit:

Eff = $\exp^{\log(\text{En})} [2.17e+00 + -8.06e-01 \cdot \text{En} + -5.16e-04 \cdot \text{En}^2]$
 (Where En = Energy in keV) (Linear/Quad)

| Pk. | Energy # | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|-----|----------|---------------------|--------------|-----------------------|--------------|-----------------------|
| 1 | 59.50 | 7.60e-02 | 0.66 | 7.65e-02 | -18.14 | 6.48e-02 |
| 2 | 88.04 | 1.09e-01 | -2.40 | 1.06e-01 | -3.09 | 1.03e-01 |
| 3 | 122.06 | 1.19e-01 | 2.64 | 1.23e-01 | -4.83 | 1.17e-01 |
| 4 | 165.85 | *1.28e-01 | -0.97 | 1.27e-01 | -14.25 | 1.11e-01 |
| 5 | 391.68 | 6.83e-02 | 2.25 | 6.98e-02 | -6.87 | 6.53e-02 |
| 6 | 661.64 | 4.92e-02 | -7.84 | 4.56e-02 | -3.21 | 4.42e-02 |
| 7 | 898.02 | 3.42e-02 | 3.89 | 3.56e-02 | -1.49 | 3.51e-02 |
| 8 | 1173.21 | 2.88e-02 | -0.57 | 2.86e-02 | -0.06 | 2.86e-02 |
| 9 | 1332.48 | 2.46e-02 | 4.88 | 2.58e-02 | 0.60 | 2.60e-02 |
| 10 | 1836.01 | 2.05e-02 | -3.18 | 1.99e-02 | 2.24 | 2.04e-02 |

Calibration Results Saved.

* MANUALLY ADJUSTED EFFICIENCY FROM
 ORIGINAL VALUE OF 1.08×10^{-1} , % DIFF.
 FROM CALCULATED VALUE \Rightarrow 14.9%,

** 279 keV PEAK REMOVED DUE TO MORE
 THAN 5 HALF-LIVES EXPIRED,
 CHANGES O.K. PER P.A. S.O.P. 713.

MC 5-24-04

Efficiency Calibration VerificationGeo. 11 Std # 589
Det. # 10

| FROM CALIBRATION CERTIFICATE | | | |
|------------------------------|------|--------------|------------|
| Isotope | KeV | Half Life(y) | Gamma/Sec. |
| Am-241 | 59.9 | 432.0000 | 1345 |
| Cd-109 | 88 | 1.2666 | 1881 |
| Co-57 | 122 | 0.7441 | 1030 |
| Ce-139 | 166 | 0.3768 | 1402 |
| Hg-203 | 279 | 0.1276 | 2980 |
| Sn-113 | 392 | 0.3151 | 1860 |
| Cs-137 | 662 | 30.0000 | 1205 |
| Y-88 | 898 | 0.2919 | 4932 |
| Co-60 | 1173 | 5.2714 | 2360 |
| Co-60 | 1332 | 5.2714 | 2381 |
| Y-88 | 1836 | 0.2919 | 5162 |

| FROM ANALYTICS LIB | | | |
|--------------------|--|-----------------|-------------|
| | | Mass | of Standard |
| | | Gamma Fraction: | 100 |
| | | 0.3590 | 9 |

| EXPECTED ACTIVITY | | | |
|-------------------|---------|---------|-------------|
| | | pCi/g | % Recovery |
| Am-241 | 3746.5 | 1012.6 | 100.7% |
| Cd-109 | 52105.3 | 14082.5 | 103.0% |
| Co-57 | 1204.5 | 325.6 | 98.6% |
| Ce-139 | 1744.9 | 471.6 | >5 Halfives |
| Hg-203 | 3855.1 | 1041.9 | >5 Halfives |
| Sn-113 | 2865.9 | 774.6 | >5 Halfives |
| Cs-137 | 1415.6 | 382.6 | >5 Halfives |
| Y-88 | 5280.5 | 1427.2 | >5 Halfives |
| Co-60 | 2360.0 | 637.8 | 95.2% |
| Co-60 | 2381.0 | 643.5 | 96.5% |
| Y-88 | 5194.2 | 1403.8 | >5 Halfives |

| MEASURED ACTIVITY | | | |
|-------------------|--|-------------|-------------|
| | | pCi/g | Pass ? |
| | | 1020 | Pass |
| | | 14500 | Pass |
| | | 321 | Pass |
| | | >5 Halfives | >5 Halfives |
| | | >5 Halfives | >5 Halfives |
| | | >5 Halfives | >5 Halfives |
| | | >5 Halfives | >5 Halfives |
| | | >5 Halfives | >5 Halfives |
| | | 412 | Pass |
| | | >5 Halfives | >5 Halfives |
| | | 607 | Pass |
| | | 621 | Pass |
| | | >5 Halfives | >5 Halfives |

040770D10.SPC Analyzed by

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-10A GEO 11 CAL VER (589)

```
-----  

Sampling Start: 07/01/2001 12:00:00 | Counting Start: 05/26/2004 15:37:44  

Sampling Stop: 07/01/2001 12:00:00 | Decay Time. . . . . 2.54E+004 Hrs  

Buildup Time. . . . . 0.00E+000 Hrs | Live Time . . . . . 1800 Sec  

Sample Size . . . . . 1.00E+002 g | Real Time . . . . . 1888 Sec  

Collection Efficiency . . . . . 1.0000 | Spc. File . . . . . 040770D10.SPC
```

```
-----  

Detector #: 10 (Detector 10)  

Energy(keV) = -1.15 + 0.501*Ch + 6.50E-08*Ch^2 + 1.24E-11*Ch^3 05/26/2004  

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004  

Where En = Sqrt(Energy in keV)
```

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 50.06 | 102.30 | 8190 | 749 | 598 | 40609 | 2.94 | a HiResid Wide Pk |
| 2 | 56.45 | 115.08 | 13922 | 775 | 607 | 38910 | 3.28 | b HiResid |
| 3 | 59.42 | 121.00 | 184935 | 908 | 240 | 11328 | 1.19 | c HiResid |
| 4 | 66.48 | 135.11 | 0 | 622 | 512 | 26698 | 3.52 | d NET< CL HiResid |
| 5 | 87.98 | 178.05 | 75849 | 606 | 207 | 7917 | 1.34 | a |
| 6 | 121.93 | 245.88 | 14906 | 315 | 164 | 4658 | 1.46 | a |
| 7 | 136.31 | 274.60 | 1554 | 197 | 148 | 4065 | 1.28 | a |
| 8 | 165.80 | 333.50 | 1231 | 216 | 168 | 4633 | 1.69 | a |
| 9 | 392.05 | 785.42 | 479 | 215 | 173 | 5029 | 1.94 | a |
| 10 | 510.89 | 1022.76 | 170 | 165 | 134 | 3457 | 1.81 | a |
| 11 | 661.71 | 1323.92 | 99682 | 661 | 161 | 3971 | 2.84 | a HiResid |
| 12 | 820.89 | 1641.76 | 188 | 166 | 134 | 3198 | 2.18 | a |
| 13 | 897.95 | 1795.60 | 191 | 153 | 124 | 3109 | 1.69 | a |
| 14 | 1173.24 | 2345.07 | 79060 | 611 | 196 | 4732 | 3.86 | a HiResid |
| 15 | 1332.50 | 2662.89 | 72961 | 580 | 174 | 3451 | 4.38 | a HiResid |
| 16 | 1836.19 | 3667.53 | 188 | 92 | 72 | 540 | 5.09 | a |
| 17 | 1838.07 | 3671.28 | -9 | 68 | 56 | 401 | 3.79 | b NET< CL |

040770D10.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET100521.BKG (0417010-30 Weekly Bkg)

Bkg.File Detector #: 10

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 4 | 66.48 | 0 | 622 | 512 | -22 | 622 | 512 | NET<CL |
| 5 | 87.98 | 75849 | 606 | 207 | 75838 | 606 | 207 | |
| 10 | 510.89 | 170 | 165 | 134 | 17 | 165 | 136 | NET<CL |
| 13 | 897.95 | 191 | 153 | 124 | 185 | 154 | 124 | |

040770D10.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo.11 / Solid

Sample ID: 0413010-10A GEO 11 CAL VER (589)

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 07/01/2001 12:00:00 | Counting Start: | 05/26/2004 15:37:44 |
| Sampling Stop: | 07/01/2001 12:00:00 | Decay Time. | 2.54e+004 Hrs |
| Buildup Time. | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 1.00e+002 g | Real Time | 1888 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 040770D10.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh11).EFF (Geo 11 Eff Cal)

Eff=10^[-6.88E+00 +5.45E+00*L +-1.24E+00*L^2 +0.00E+00*L^3] 05/24/2004
Eff.= EXP[2.17E+00 + -8.06E-01 * En + -5.16E-04 * En^2] Above 180.00 keV-----
Library File: . . . ANALYTICAL.LIB (Analytical)=====
MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY E (keV) | Concentration (pCi/g T) |) | MDA | Critical Level | Halflife (hrs) |
|---------|-----------|----------------|-------------------------|-------------|-----------|----------------|----------------|
| Am-241 | | 59.54 | 1.02E+03 | +- 4.98E+00 | 2.65E+00 | 1.32E+00 | 3.79E+06 |
| Cd-109 | | 88.02 | 1.45E+04 | +- 1.16E+02 | 7.97E+01 | 3.96E+01 | 1.11E+04 |
| Co-57 | | 122.07 | 3.21E+02 | +- 6.79E+00 | 7.11E+00 | 3.53E+00 | 6.50E+03 |
| Ce-139 | | 165.85 | 3.78E+02 | +- 6.63E+01 | 1.04E+02 | 5.15E+01 | 3.30E+03 |
| Cs-137 | | 661.62 | 4.12E+02 | +- 2.73E+00 | 1.34E+00 | 6.65E-01 | 2.64E+05 |
| Co-60 | Average:x | 6.14E+02 | +- 3.40E+00 | | | | 4.62E+04 |
| | 1173.21 | 6.07E+02 | +- 4.69E+00 | | 3.03E+00 | 1.51E+00 | 4.62E+04 |
| | 1332.48 | 6.21E+02 | +- 4.94E+00 | | 2.99E+00 | 1.48E+00 | 4.62E+04 |
| Hg-203 | | 279.18 | MDA | | 4.56E+06 | 2.26E+06 | 1.12E+03 |
| Sn-113 | | 391.68 | MDA | | 4.32E+02R | 2.13E+02 | 2.76E+03 |
| Y-88 | | 898.02 | MDA | | 1.06E+03R | 5.24E+02 | 2.56E+03 |

=====
MEASURED TOTAL: 1.72E+04 +- 2.00E+02 pCi/g=====
UNKNOWN, SUM or ESCAPE PEAKS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (kev) | FLAG |
|-------|--------------|-----------------|------------|---------------|-------------|------------|------------|---------|
| 1 | 50.06 | 102.30 | 8190 | 749 | 598 | 40609 | 2.94 | Unknown |
| 2 | 56.45 | 115.08 | 13922 | 775 | 607 | 38910 | 3.28 | Unknown |
| 4 | 66.48 | 135.11 | -22 | 622 | 512 | 26698 | 3.52 | Deleted |
| 7 | 136.31 | 274.60 | 1554 | 197 | 148 | 4065 | 1.28 | Unknown |

040770D10.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|----------|
| 9 | 392.05 | 785.42 | 479 | 215 | 173 | 5029 | 1.94 | Unknown |
| 10 | 510.89 | 1022.76 | 17 | 165 | 136 | 3457 | 1.81 | Deleted |
| 12 | 820.89 | 1641.76 | 188 | 166 | 134 | 3198 | 2.18 | 1333SEsc |
| 13 | 897.95 | 1795.60 | 185 | 154 | 124 | 3109 | 1.69 | Unknown |
| 16 | 1836.19 | 3667.53 | 188 | 92 | 72 | 540 | 5.09 | Unknown |
| 17 | 1838.07 | 3671.28 | -9 | 68 | 56 | 401 | 3.79 | Deleted |

ANALYTICS1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.Phone (404) 352-8677
Fax (404) 352-2837**CERTIFICATE OF CALIBRATION**

Standard Radionuclide Source

RSO# 745

Rec'd 4/12/04 DB

67889-307

Sand in 16 Ounce PP MRP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: January 1, 2004 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | Y | 1305 |
| Cd-109 | 88 | 462.6 | d | 1852 |
| Co-57 | 122 | 271.79 | d | 1077 |
| Ce-139 | 166 | 137.6 | d | 1456 |
| Hg-203 | 279 | 46.61 | d | 3261 |
| Sn-113 | 392 | 115.1 | d | 1902 |
| Cs-137 | 662 | 30.07 | Y | 1253 |
| Y-88 | 898 | 106.6 | d | 4877 |
| Co-60 | 1173 | 5.2714 | Y | 2377 |
| Co-60 | 1332 | 5.2714 | Y | 2395 |
| Y-88 | 1836 | 106.6 | d | 5095 |

500 grams (approx. 290 mL) of customer supplied sand.
P O NUMBER 70073, Item 1

SOURCE PREPARED BY: M. Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED: A.M. Mitz 4-6-04

This standard will expire one year after the calibration date.

000468



ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
customerservice@analyticsinc.com
www.analyticsinc.com

BATCH 115 DATA

CALIBRATION DATE: January 1, 2004 12:00 EST

| Isotope | µCi/Gram | Gammas per Second per Gram | Half-Life | Energy | Branching Ratio |
|--------------|----------------|----------------------------|-----------|------------------|------------------|
| Cd-109 | 124.786 | 167600 | 462.6 d | 88 | 0.0363 |
| Co-57 | 3.078 | 97450 | 271.79 d | 122.1 | 0.8556 |
| Ce-139 | 4.455 | 131700 | 137.6 d | 165.9 | 0.7989 |
| Hg-203 | 9.791 | 295100 | 46.61 d | 279.2 | 0.8146 |
| Sn-113 | 7.159 | 172100 | 115.1 d | 391.7 | 0.6497 |
| Cs-137 | 3.601 | 113400 | 30.07 y | 661.7 | 0.851 |
| Y-88 | 12.644 | 441300 461000 | 106.6 d | 898.0 1836.1 | 0.9370 0.9920 |
| Co-60 | 5.836 | 215100 216700 | 5.271 y | 1173.2 1332.5 | 0.9997 0.9999 |
| TOTAL | 171.350 | | | | |

ADDITIONAL ISOTOPES

| | | | | | |
|--------|--|--|------------|------|--------|
| Am-241 | | | 4.322 E2 y | 59.5 | 0.3590 |
|--------|--|--|------------|------|--------|

ANALYTICS

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email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 115

CALIBRATION DATE: January 1, 2004 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD ¹ | STATISTICS ² | CALIBRATION ² | PEAK FITTING ² | GEOMETRY ² | IMPURITIES ² | WEIGHING ² | COMBINED STANDARD UNCERTAINTY ² | RELATIVE EXPANDED UNCERTAINTY ² (K=2) |
|---------|-----------------|------------------------------------|-------------------------|--------------------------|------------------------------|-----------------------|-------------------------|-----------------------|--|---|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.2 | 1.64 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 1.1 | 0.71 | 0.7 | 0 | 0.2 | 1.52 | 3.0 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.2 | 1.38 | 2.8 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.2 | 1.37 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.30 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.2 | 1.49 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.2 | 1.29 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.2 | 1.33 | 2.7 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.2 | 1.32 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.31 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Am-241 | 59.5 | 4πLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.2 | 1.36 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |

¹Calibration Methods:

4πLS (4 π Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

000463



U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 2004, through December 31, 2004, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Michael P. Unterweger, Acting Leader
Radioactivity Group
Physics Laboratory
(over)

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
customerservice@analyticsinc.com
www.analyticsinc.com

SHIPPER'S DECLARATION

Shipment number 21075-11923 contains the following isotopes:

FORM: Solid

| <u>RADIOMUCLIDE</u> | <u>QUANTITY IN MICROCURIES*</u> |
|---------------------|---------------------------------|
| Cd-109 | 1.379 |
| Co-57 | 0.0340 |
| Ce-139 | 0.0492 |
| Hg-203 | 0.108 |
| Sn-113 | 0.0791 |
| Cs-137 | 0.0398 |
| Y-88 | 0.140 |
| Co-60 | 0.0645 |
| Am-241 | 0.0983 |
| TOTAL: | 1.99 |

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package-limited quantity of material, UN2910.

SHIPPED TO: Paragon Analytics, Inc.

DATE: 4.8.04
T-Kassal

*Quantities stated are approximate and for shipping purposes only. For certified quantities see Certificate of Calibration for each radioactive standard.

Ship. Desc. MIXED GAMMA

000470



ANALYTICS

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www.analyticsinc.com

MSDS

**IMPORTANT SAFETY INFORMATION
DO NOT DISCARD
PLEASE ROUTE TO COMPANY SAFETY OFFICER**

Be advised that radioactive materials are not included in the notification requirements of OSHA Hazard Communication Standard (29CFR1910.1200). This does not minimize the hazards and control requirements associated with radioactive materials, which are subject to various federal and state regulations.



Robert C. McFarland, RSO
Analytics, Inc.

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

66010-307

PA ID 677
rec'd 4-30-03

500 Grams of Sand in 500 mL PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: April 1, 2003 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | 1408 | 3.0 |
| Cd-109 | 88 | 462.6 | 1974 | 3.3 |
| Co-57 | 122 | 271.79 | 1101 | 2.8 |
| Ce-139 | 166 | 137.6 | 1479 | 2.7 |
| Hg-203 | 279 | 46.61 | 3463 | 2.7 |
| Sn-113 | 392 | 115.1 | 2037 | 2.6 |
| Cs-137 | 662 | 30.07 | 1388 | 3.0 |
| Y-88 | 898 | 106.6 | 5310 | 2.6 |
| Co-60 | 1173 | 5.2714 | 2583 | 2.6 |
| Co-60 | 1332 | 5.2714 | 2612 | 2.6 |
| Y-88 | 1836 | 106.6 | 5550 | 2.6 |

290 mL of customer supplied sand.

P O NUMBER EW041003, Item 1

SOURCE PREPARED BY:

M. D. Currie, Radiochemist

Q A APPROVED:

LM. Mitz 4-29-03

This standard will expire one year after the calibration date.

000472



1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

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email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS BATCH 112

CALIBRATION DATE: APRIL 1, 2003 12:00 EST

| ISOTOPE | ENERGY (keV) | CALIBRATION METHOD* | STATISTICS | CALIBRATION | PEAK FITTING | GEOMETRY | IMPURITIES | WEIGHING | COMBINED STANDARD UNCERTAINTY | RELATIVE EXPANDED UNCERTAINTY (K=2) |
|---------|-----------------|------------------------|------------|-------------|-----------------|----------|------------|----------|-------------------------------------|--|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.1 | 1.63 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 0.93 | 0.71 | 0.7 | 0 | 0.1 | 1.39 | 2.8 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.1 | 1.37 | 2.7 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.1 | 1.36 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.1 | 1.29 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.1 | 1.48 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.1 | 1.28 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | 0.97 | 0.45 | 0.7 | 0 | 0.1 | 1.32 | 2.6 |
| Co-60 | 1332 | HPGe | 0.33 | 0.93 | 0.48 | 0.7 | 0 | 0.1 | 1.31 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.1 | 1.30 | 2.6 |

OPTIONAL ADDITIONAL ISOTOPES

| | | | | | | | | | | |
|--------|------|------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4NLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.1 | 1.49 | 3.0 |
| Am-241 | 59.5 | 4NLS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.1 | 1.49 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.1 | 1.35 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.1 | 1.33 | 2.7 |

*Calibration Methods:

4NLS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.



U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)



ANALYTICS

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email: analytics@mindspring.com
www.analyticsinc.com

SHIPPER'S DECLARATION

Shipment number 20080-11346 contains the following isotopes:

FORM: Solid

| <u>RADIOMUCLIDE</u> | <u>QUANTITY IN MICROCURIES*</u> |
|---------------------|---------------------------------|
| Cd-109 | 1.680 |
| Co-57 | 0.040 |
| Ce-139 | 0.057 |
| Hg-203 | 0.131 |
| Sn-113 | 0.097 |
| Cs-137 | 0.050 |
| Y-88 | 0.174 |
| Co-60 | 0.080 |
| Am-241 | 0.121 |
| TOTAL: | 2.430 |

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package-limited quantity of material, UN2910.

SHIPPED TO: Paragon Analytics

DATE: 4-29-03

T E Kahl

*Quantities stated are approximate and for shipping purposes only. For certified quantities see Certificate of Calibration for each radioactive standard.

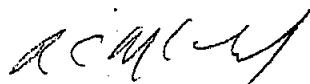
1380 Seaboard Industrial Blvd.
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email: analytics@mindspring.com
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MSDS

**IMPORTANT SAFETY INFORMATION
DO NOT DISCARD
PLEASE ROUTE TO COMPANY SAFETY OFFICER**

Be advised that radioactive materials are not included in the notification requirements of OSHA Hazard Communication Standard (29CFR1910.1200). This does not minimize the hazards and control requirements associated with radioactive materials, which are subject to various federal and state regulations.



Robert C. McFarland, RSO
Analytics, Inc.

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0413013-1 Geo 13 Eff Cal (745)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 01/01/2004 12:00:00 | Counting Start: | 06/18/2004 11:47:17 |
| Sampling Stop: | 01/01/2004 12:00:00 | Decay Time | 4.06E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 3600 Sec |
| Sample Size | 5.00E+002 g | Real Time | 3835 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041373D01.SPC |

Detector #: 1 (Detector 1)

Energy(keV) = -1.17 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/18/2004

FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 56.34 | 114.88 | 9809 | 1140 | 924 | 81351 | 3.78 | a HiResid Wide Pk |
| 2 | 59.47 | 121.12 | 68735 | 770 | 464 | 35370 | 1.57 | b HiResid |
| 3 | 66.59 | 135.35 | 2999 | 805 | 656 | 63614 | 2.42 | a Wide Pk |
| 4 | 69.86 | 141.89 | 5427 | 1144 | 933 | 97541 | 3.84 | b |
| 5 | 72.83 | 147.82 | 2594 | 762 | 621 | 59373 | 2.23 | c |
| 6 | 87.98 | 178.07 | 183841 | 1093 | 558 | 54771 | 1.74 | a |
| 7 | 122.01 | 246.06 | 110122 | 845 | 430 | 34153 | 1.59 | a HiResid |
| 8 | 136.48 | 274.97 | 15034 | 598 | 449 | 33841 | 1.89 | a |
| 9 | 165.83 | 333.60 | 102855 | 800 | 393 | 27210 | 1.85 | a |
| 10 | 255.17 | 512.05 | 3162 | 401 | 317 | 19337 | 1.85 | a |
| 11 | 279.18 | 560.03 | 35968 | 536 | 311 | 17882 | 1.96 | a |
| 12 | 391.71 | 784.81 | 78674 | 658 | 282 | 14148 | 2.08 | a |
| 13 | 511.12 | 1023.34 | 3064 | 431 | 343 | 16285 | 3.21 | a |
| 14 | 661.70 | 1324.14 | 109033 | 737 | 268 | 11835 | 2.40 | a HiResid |
| 15 | 813.95 | 1628.28 | 357 | 223 | 181 | 6307 | 1.82 | a |
| 16 | 821.68 | 1643.72 | 176 | 162 | 131 | 4013 | 1.21 | b |
| 17 | 898.10 | 1796.38 | 109047 | 730 | 255 | 10324 | 2.66 | a HiResid |
| 18 | 1173.30 | 2346.13 | 130168 | 764 | 207 | 6342 | 2.99 | a HiResid |
| 19 | 1328.41 | 2655.97 | 6702 | 439 | 335 | 8730 | 7.31 | a HiResid Wide Pk |
| 20 | 1332.56 | 2664.26 | 120476 | 721 | 161 | 3686 | 3.08 | b HiResid |
| 21 | 1836.01 | 3669.96 | 74022 | 574 | 151 | 2971 | 3.67 | a HiResid |

041373D01.SPC Analyzed by

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413013-1 Geo 13 Eff Cal (745)

Stds. Match Tolerance: 2.00 keV

Detector Number: 01 Calibration Date. . . 06/18/2004 11:47:17

Geometry File (D01)(Sh13).EFF ID. Geo 13 Eff Cal

Amount of Std. in Calib. Source: 500.000000 gm

Eff = 1 / [9.08e-03*En^-3.09e+00 + 5.58e+01*En^ 5.94e-01](Where En = Energy in MeV)) (Exponential)

| Pk. # | Energy (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|----------|-----------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 1.46e-02 | 3.46 | 1.52e-02 | -20.46 | 1.26e-02 |
| 2 | 88.04 | 3.55e-02 | -5.54 | 3.37e-02 | -0.39 | 3.35e-02 |
| 3 | 122.06 | 4.37e-02 | 3.75 | 4.54e-02 | 8.43 | 4.96e-02 |
| 4 | 165.85 | 4.60e-02 | 1.01 | 4.65e-02 | 9.61 | 5.14e-02 |
| 5 | 279.00 | 3.78e-02 | -0.65 | 3.76e-02 | 6.40 | 4.02e-02 |
| 6 | 391.68 | 3.18e-02 | -2.15 | 3.11e-02 | 3.87 | 3.24e-02 |
| 7 | 661.64 | 2.44e-02 | -6.67 | 2.29e-02 | 0.01 | 2.29e-02 |
| 8 | 898.02 | 1.86e-02 | 2.46 | 1.91e-02 | -2.27 | 1.87e-02 |
| 9 | 1173.21 | 1.62e-02 | 0.89 | 1.63e-02 | -4.29 | 1.56e-02 |
| 10 | 1332.48 | 1.48e-02 | 1.82 | 1.51e-02 | -5.26 | 1.44e-02 |
| 11 | 1836.01 | 1.21e-02 | 3.12 | 1.25e-02 | -7.76 | 1.16e-02 |

Calibration Results Saved.

Efficiency Calibration Verification

Std. #582

Det. : 1

| FROM CALIBRATION CERTIFICATE | | | | FROM ANALYTICS LIB | | | | EXPECTED ACTIVITY | | | | MEASURED ACTIVITY | | | | |
|------------------------------|------|--------------|------------|--------------------|-----------|------|-------------|-------------------|--------|--------|-------|-------------------|-------------|-------------|-------|----|
| Isotope | KeV | Half Life(y) | Gamma/Sec. | Gamma | Fraction: | Mass | of Standard | DPS | pCi/g | DPS | pCi/g | % Recovery | Am-241 | 192 | 97.6% | OK |
| Am-241 | 59.9 | 432.0000 | 1307 | 0.3590 | 500 | 9 | | 3640.7 | 196.8 | Am-241 | 192 | 97.6% | OK | | | |
| Cd-109 | 88 | 1.2666 | 1877 | 0.0361 | | | | 51994.5 | 2810.5 | Cd-109 | 2980 | 106.0% | OK | | | |
| Co-57 | 122 | 0.7441 | 957.7 | 0.8551 | | | | 1120.0 | 60.5 | Co-57 | 62.5 | 103.2% | OK | | | |
| Ce-139 | 166 | 0.3768 | 1352 | 0.8035 | | | | 1682.6 | 91.0 | Ce-139 | >5 | Haffives | >5 Haffives | >5 Haffives | | |
| Hg-203 | 279 | 0.1276 | 2882 | 0.7730 | | | | 3728.3 | 201.5 | Hg-203 | >5 | Haffives | >5 Haffives | >5 Haffives | | |
| Sn-113 | 392 | 0.3151 | 1956 | 0.6490 | | | | 3013.9 | 162.9 | Sn-113 | >5 | Haffives | >5 Haffives | >5 Haffives | | |
| Cs-137 | 662 | 30.0000 | 1333 | 0.8512 | | | | 1566.0 | 84.6 | Cs-137 | 90.1 | 106.4% | OK | | | |
| Y-88 | 898 | 0.2919 | 4861 | 0.9340 | | | | 5204.5 | 281.3 | Y-88 | >5 | Haffives | >5 Haffives | >5 Haffives | | |
| Co-60 | 1173 | 5.2714 | 2310 | 1.0000 | | | | 2310.0 | 124.9 | Co-60 | 122 | 97.7% | OK | | | |
| Co-60 | 1332 | 5.2714 | 2320 | 1.0000 | | | | 2320.0 | 125.4 | Co-60 | 122 | 97.3% | OK | | | |
| Y-88 | 1836 | 0.2919 | 5097 | 0.9938 | | | | 5128.8 | 277.2 | Y-88 | >5 | Haffives | >5 Haffives | >5 Haffives | | |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0413013-1A Geo 13 Cal Ver (582)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 04/01/2001 12:00:00 | Counting Start: | 06/21/2004 13:31:51 |
| Sampling Stop: | 04/01/2001 12:00:00 | Decay Time | 2.82E+004 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00E+002 g | Real Time | 1946 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041386D01.SPC |

Detector #: 1 (Detector 1)
 Energy(keV) = -1.10 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/21/2004
 FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 57.55 | 117.17 | 2564 | 426 | 340 | 14272 | 2.67 | a Wide Pk |
| 2 | 59.59 | 121.24 | 34672 | 462 | 225 | 7891 | 1.73 | b |
| 3 | 68.43 | 138.90 | 455 | 350 | 286 | 10387 | 3.16 | a Wide Pk |
| 4 | 88.03 | 178.05 | 20805 | 369 | 189 | 6304 | 1.77 | a |
| 5 | 122.10 | 246.14 | 3986 | 235 | 163 | 4679 | 1.76 | a |
| 6 | 136.61 | 275.11 | 580 | 251 | 203 | 6068 | 2.41 | a |
| 7 | 165.73 | 333.30 | 212 | 125 | 100 | 2305 | 0.99 | a |
| 8 | 511.77 | 1024.62 | 208 | 175 | 142 | 3197 | 2.70 | a |
| 9 | 661.71 | 1324.17 | 54380 | 485 | 108 | 2000 | 2.37 | a HiResid |
| 10 | 1173.27 | 2346.18 | 43484 | 433 | 96 | 1376 | 2.99 | a HiResid |
| 11 | 1332.48 | 2664.24 | 40049 | 407 | 63 | 564 | 3.19 | a HiResid |
| 12 | 1460.32 | 2919.65 | 68 | 62 | 49 | 268 | 4.55 | a |

041386D01.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File: DET010618.BKG (0418003-21 Weekly Background)

Bkg.File Detector #: 1

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 8 | 511.77 | 208 | 175 | 142 | 84 | 176 | 144 | NET<CL |
| 12 | 1460.32 | 68 | 62 | 49 | 22 | 62 | 51 | NET<CL |

041386D01.SPC Analyzed by

SEEKER

F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0413013-1A Geo 13 Cal Ver (582)

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 04/01/2001 12:00:00 | Counting Start: | 06/21/2004 13:31:51 |
| Sampling Stop: | 04/01/2001 12:00:00 | Decay Time | 2.82e+004 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00e+002 g | Real Time | 1946 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 041386D01.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 1 (Detector 1)

Efficiency File: (D01)(Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[9.08E-03*En^-3.09E+00 + 5.58E+01*En^5.94E-01] 06/18/2004

Library File: . . . ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | Critical MDA | Level | Halflife (hrs) |
|---------|-----------|--------------|-----|-----------------------|----------|--------------|----------|----------------|
| Am-241 | 59.54 | 1.92E+02 | +- | 2.56E+00 | 2.51E+00 | 1.25E+00 | 3.79E+06 | |
| Cd-109 | 88.02 | 2.98E+03 | +- | 5.29E+01 | 5.47E+01 | 2.71E+01 | 1.11E+04 | |
| Co-57 | 122.07 | 6.25E+01 | +- | 3.69E+00 | 5.16E+00 | 2.56E+00 | 6.50E+03 | |
| Cs-137 | 661.62 | 9.01E+01 | +- | 8.03E-01 | 3.63E-01 | 1.79E-01 | 2.64E+05 | |
| Co-60 | Average:x | 1.22E+02 | +- | 8.68E-01 | . | . | 4.62E+04 | |
| | 1173.21 | 1.22E+02 | +- | 1.22E+00 | 5.50E-01 | 2.71E-01 | 4.62E+04 | |
| | 1332.48 | 1.22E+02 | +- | 1.24E+00 | 3.89E-01 | 1.90E-01 | 4.62E+04 | |
| Ce-139 | 165.85 | MDA | . | . | 6.18E+01 | r | 3.05E+01 | 3.30E+03 |
| Hg-203 | 279.18 | MDA | . | . | 1.16E+07 | | 5.77E+06 | 1.12E+03 |
| Sn-113 | 391.68 | MDA | . | . | 5.04E+02 | | 2.50E+02 | 2.76E+03 |
| Y-88 | 898.02 | MDA | . | . | 8.65E+02 | | 4.28E+02 | 2.56E+03 |

MEASURED TOTAL: 3.45E+03 +- 6.08E+01 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-----|--------------|-----------------|------------|---------------|-------------|------------|------------|---------|
| 1 | 57.55 | 117.17 | 2564 | 426 | 340 | 14272 | 2.67 | Unknown |
| 3 | 68.43 | 138.90 | 455 | 350 | 286 | 10387 | 3.16 | Unknown |
| 6 | 136.61 | 275.11 | 580 | 251 | 203 | 6068 | 2.41 | Unknown |
| 7 | 165.73 | 333.30 | 212 | 125 | 100 | 2305 | 0.99 | Unknown |
| 8 | 511.77 | 1024.62 | 84 | 176 | 144 | 3197 | 2.70 | Deleted |

041386D01.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 12 | 1460.32 | 2919.65 | 22 | 62 | 51 | 268 | 4.55 | Deleted |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0413013-2 Geo 13 Eff Cal (745)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 01/01/2004 12:00:00 | Counting Start: | 06/12/2004 11:07:50 |
| Sampling Stop: | 01/01/2004 12:00:00 | Decay Time | 3.91E+003 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 3600 Sec |
| Sample Size | 5.00E+002 g | Real Time | 3773 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040939D02.SPC |

Detector #: 2 (Detector 2)

Energy(keV) = -0.71 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/12/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 59.53 | 120.45 | 20458 | 411 | 243 | 11898 | 0.78 | a |
| 2 | 73.01 | 147.40 | 874 | 185 | 144 | 5753 | 0.37 | a |
| 3 | 82.46 | 166.30 | 3423 | 548 | 440 | 26825 | 1.63 | a HiResid Wide Pk |
| 4 | 85.01 | 171.40 | 7461 | 728 | 582 | 37555 | 2.26 | b HiResid |
| 5 | 87.99 | 177.36 | 93031 | 708 | 295 | 16095 | 0.92 | c HiResid |
| 6 | 122.08 | 245.51 | 61428 | 574 | 239 | 11488 | 0.77 | a HiResid |
| 7 | 136.53 | 274.41 | 7766 | 322 | 221 | 9873 | 0.81 | a HiResid |
| 8 | 165.87 | 333.06 | 58471 | 543 | 204 | 8380 | 0.88 | a |
| 9 | 255.12 | 511.52 | 1712 | 221 | 168 | 5713 | 0.89 | a |
| 10 | 279.21 | 559.68 | 20454 | 357 | 176 | 5728 | 1.04 | a |
| 11 | 391.73 | 784.64 | 38336 | 443 | 170 | 4913 | 1.06 | a HiResid |
| 12 | 511.41 | 1023.94 | 1316 | 353 | 284 | 9185 | 3.00 | a Wide Pk |
| 13 | 661.73 | 1324.48 | 45190 | 460 | 145 | 3902 | 1.38 | a |
| 14 | 813.88 | 1628.70 | 810 | 172 | 133 | 3085 | 1.48 | a |
| 15 | 898.14 | 1797.16 | 46805 | 465 | 140 | 3628 | 1.62 | a |
| 16 | 1173.31 | 2347.34 | 51875 | 475 | 112 | 2111 | 1.89 | a |
| 17 | 1324.92 | 2650.47 | 1057 | 150 | 111 | 1773 | 3.15 | a Wide Pk |
| 18 | 1332.49 | 2665.60 | 47212 | 445 | 78 | 1120 | 2.02 | b |
| 19 | 1835.94 | 3672.21 | 28666 | 343 | 43 | 310 | 2.46 | a |

040939D02.SPC Analyzed by

 SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413013-2 Geo 13 Eff Cal (745)

Stds. Match Tolerance: 2.00 keV

Detector Number: 02 Calibration Date. . . 06/12/2004 11:07:50

Geometry File (D02)(Sh13).EFF ID. Geo 13 Eff Cal

Amount of Std. in Calib. Source: 500.000000 gm

Eff = 1 / [5.36e-04*En^(-4.56e+00) + 1.37e+02*En^(7.41e-01)]

(Where En = Energy in MeV)) (Exponential)

| Pk. # | Energy (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|----------|-----------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 4.36e-03 | 2.61 | 4.47e-03 | 5.39 | 4.73e-03 |
| 2 | 88.04 | 1.78e-02 | -2.03 | 1.75e-02 | -6.33 | 1.64e-02 |
| 3 | 122.06* | 2.70e-02 | 0.98 | 2.73e-02 | -6.14 | 2.57e-02 |
| 4 | 165.85 | 2.54e-02 | 3.27 | 2.62e-02 | -2.97 | 2.55e-02 |
| 5 | 279.00 | 1.97e-02 | -5.08 | 1.87e-02 | -0.84 | 1.86e-02 |
| 6 | 391.68 | 1.49e-02 | -2.31 | 1.46e-02 | -0.40 | 1.45e-02 |
| 7 | 661.64 | 1.01e-02 | -2.14 | 9.91e-03 | 0.03 | 9.91e-03 |
| 8 | 898.02 | 7.69e-03 | 2.65 | 7.90e-03 | 0.26 | 7.92e-03 |
| 9 | 1173.21 | 6.43e-03 | 0.86 | 6.48e-03 | 0.46 | 6.51e-03 |
| 10 | 1332.48 | 5.81e-03 | 1.60 | 5.90e-03 | 0.55 | 5.93e-03 |
| 11 | 1836.01 | 4.51e-03 | 3.07 | 4.65e-03 | 0.78 | 4.69e-03 |

Calibration Results Saved.

*MANUALLY ADJUSTED EFFICIENCY FROM ORIGINAL
 VALUE OF 2.4×10^{-2} , % DIFF. FROM CALCULATED
 VALUE $\Rightarrow 12.1\%$. CHANGE IS O.K. PER
 P.A. SOP 713, MC 6/14/04

Efficiency Calibration Verification

 Std. #582
 Det. : 2

| FROM CALIBRATION CERTIFICATE | | | |
|------------------------------|------|--------------|------------|
| Isotope | KeV | Half Life(Y) | Gamma/Sec. |
| Am-241 | 59.9 | 432.0000 | 1307 |
| Cd-109 | 88 | 1.2666 | 1877 |
| Co-57 | 122 | 0.7441 | 957.7 |
| Ce-139 | 166 | 0.3768 | 1352 |
| Hg-203 | 279 | 0.1276 | 2882 |
| Sn-113 | 392 | 0.3151 | 1956 |
| Cs-137 | 662 | 30.0000 | 1333 |
| Y-88 | 898 | 0.2919 | 4861 |
| Co-60 | 1173 | 5.2714 | 2310 |
| Co-60 | 1332 | 5.2714 | 2320 |
| Y-88 | 1836 | 0.2919 | 5097 |

| FROM ANALYTICS LIB | | | |
|--------------------|-------------|-----------------|--------|
| Mass | of Standard | Gamma Fraction: | 0.3590 |
| | 500 | 9 | 0.3590 |
| | | | 0.0361 |
| | | | 0.8551 |
| | | | 0.8035 |
| | | | 0.7730 |
| | | | 0.6490 |
| | | | 0.8512 |
| | | | 0.9340 |
| | | | 0.2919 |
| | | | 1.0000 |
| | | | 1.0000 |
| | | | 0.9938 |

| EXPECTED ACTIVITY | | | |
|-------------------|---------|--------|------------|
| | DPS | pCi/g | % Recovery |
| Am-241 | 3640.7 | 196.8 | Am-241 |
| Cd-109 | 51994.5 | 2810.5 | Cd-109 |
| Co-57 | 1120.0 | 60.5 | Co-57 |
| Ce-139 | 1682.6 | 91.0 | Ce-139 |
| Hg-203 | 3728.3 | 201.5 | Hg-203 |
| Sn-113 | 3013.9 | 162.9 | Sn-113 |
| Cs-137 | 1566.0 | 84.6 | Cs-137 |
| Y-88 | 5204.5 | 281.3 | Y-88 |
| Co-60 | 2310.0 | 124.9 | Co-60 |
| Co-60 | 2320.0 | 125.4 | Co-60 |
| Y-88 | 5128.8 | 277.2 | Y-88 |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0413013-2A Geo 13 Cal Ver (582)

```
-----  

Sampling Start: 04/01/2001 12:00:00 | Counting Start: 06/12/2004 12:14:10  

Sampling Stop: 04/01/2001 12:00:00 | Decay Time. . . . . 2.80E+004 Hrs  

Buildup Time. . . . . 0.00E+000 Hrs | Live Time . . . . . 1800 Sec  

Sample Size . . . . . 5.00E+002 g | Real Time . . . . . 1830 Sec  

Collection Efficiency . . . . . 1.0000 | Spc. File . . . . . 040940D02.SPC
```

```
-----  

Detector #: 2 (Detector 2)  

Energy(keV) = -0.71 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/12/2004  

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004  

Where En = Sqrt(Energy in keV)
```

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.54 | 120.46 | 10325 | 244 | 111 | 2497 | 0.77 | a |
| 2 | 87.99 | 177.35 | 9927 | 233 | 99 | 1966 | 0.79 | a |
| 3 | 122.08 | 245.52 | 2153 | 152 | 99 | 1815 | 0.90 | a |
| 4 | 136.63 | 274.61 | 314 | 110 | 86 | 1478 | 0.82 | a |
| 5 | 150.72 | 302.77 | 69 | 87 | 71 | 1104 | 0.60 | a NET< CL |
| 6 | 165.77 | 332.87 | 138 | 90 | 71 | 1127 | 0.57 | a |
| 7 | 174.05 | 349.43 | 105 | 128 | 104 | 1842 | 1.13 | a |
| 8 | 200.41 | 402.12 | 58 | 104 | 85 | 1448 | 0.78 | a NET< CL |
| 9 | 255.92 | 513.12 | 60 | 96 | 78 | 1217 | 0.79 | a NET< CL |
| 10 | 310.48 | 622.19 | 38 | 62 | 50 | 607 | 0.51 | a NET< CL |
| 11 | 340.73 | 682.69 | 74 | 72 | 57 | 729 | 0.68 | a |
| 12 | 450.27 | 901.69 | 70 | 107 | 87 | 1295 | 1.12 | a NET< CL |
| 13 | 510.44 | 1022.00 | 64 | 58 | 46 | 515 | 0.67 | a |
| 14 | 661.69 | 1324.42 | 23123 | 315 | 66 | 757 | 1.40 | a |
| 15 | 725.83 | 1452.66 | 62 | 71 | 57 | 606 | 1.26 | a |
| 16 | 803.52 | 1607.98 | 37 | 69 | 56 | 613 | 1.09 | a NET< CL |
| 17 | 1173.26 | 2347.24 | 17396 | 271 | 52 | 449 | 1.89 | a |
| 18 | 1332.45 | 2665.53 | 15924 | 254 | 26 | 129 | 2.03 | a |

040940D02.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET020611.BKG (0418003-12 Weekly Bkg)

Bkg.File Detector #: 2

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|--------|
| 2 | 87.99 | 9927 | 233 | 99 | 9925 | 233 | 99 | |
| 3 | 122.08 | 2153 | 152 | 99 | 2152 | 152 | 99 | |
| 13 | 510.44 | 64 | 58 | 46 | 17 | 58 | 47 | NET<CL |
| 16 | 803.52 | 37 | 69 | 56 | 34 | 69 | 56 | NET<CL |

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
 GammaScan

Geo 13 / Solid

Sample ID: 0413013-2A Geo 13 Cal Ver (582)

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 04/01/2001 12:00:00 | Counting Start: | 06/12/2004 12:14:10 |
| Sampling Stop: | 04/01/2001 12:00:00 | Decay Time. | 2.80e+004 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00e+002 g | Real Time | 1830 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 040940D02.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 2 (Detector 2)

Efficiency File: (D02) (Sh13).eff (Geo 13 Eff Cal)

*Eff.=1/[5.36E-04*En^-4.56E+00 + 1.37E+02*En^7.41E-01] 06/12/2004

Library File: ANALYTICAL.LIB (Analytical)

===== MEASURED or MDA CONCENTRATIONS =====

| Nuclide | N | ENERGY (keV) | E T | Concentration (pCi/g) |) | MDA | Critical Level | Halflife (hrs) | |
|---------|-----------|--------------|-------------|-----------------------|---|-----------|----------------|----------------|----------|
| Am-241 | | 59.54 | | 1.93E+02 +- 4.57E+00 | | 4.22E+00 | 2.09E+00 | 3.79E+06 | |
| Cd-109 | | 88.02 | | 2.71E+03 +- 6.35E+01 | | 5.47E+01 | 2.70E+01 | 1.11E+04 | |
| Co-57 | | 122.07 | | 5.49E+01 +- 3.88E+00 | | 5.13E+00 | 2.53E+00 | 6.50E+03 | |
| Cs-137 | | 661.62 | | 8.85E+01 +- 1.20E+00 | | 5.15E-01 | 2.53E-01 | 2.64E+05 | |
| Co-60 | Average:x | 1.23E+02 | +- 1.37E+00 | | | . | . | 4.62E+04 | |
| | | 1173.21 | +- 1.23E+02 | +- 1.91E+00 | | 7.48E-01 | 3.65E-01 | 4.62E+04 | |
| | | 1332.48 | +- 1.23E+02 | +- 1.97E+00 | | 4.31E-01 | 2.05E-01 | 4.62E+04 | |
| Ce-139 | | 165.85 | | MDA | | | 6.12E+01r | 2.99E+01 | 3.30E+03 |
| Hg-203 | | 279.18 | | MDA | | | 1.21E+07 | 5.96E+06 | 1.12E+03 |
| Sn-113 | | 391.68 | | MDA | | | 6.35E+02 | 3.13E+02 | 2.76E+03 |
| Y-88 | | 898.02 | | MDA | | | 1.25E+03 | 6.12E+02 | 2.56E+03 |

MEASURED TOTAL: 3.17E+03 +- 7.45E+01 pCi/g

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN-CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|------------|--------------|-------------|------------|------------|---------|
| 4 | 136.63 | 274.61 | 314 | 110 | 86 | 1478 | 0.82 | Unknown |
| 5 | 150.72 | 302.77 | 69 | 87 | 71 | 1104 | 0.60 | Deleted |
| 6 | 165.77 | 332.87 | 138 | 90 | 71 | 1127 | 0.57 | Unknown |
| 7 | 174.05 | 349.43 | 105 | 128 | 104 | 1842 | 1.13 | Unknown |
| 8 | 200.41 | 402.12 | 58 | 104 | 85 | 1448 | 0.78 | Deleted |

040940D02.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 9 | 255.92 | 513.12 | 60 | 96 | 78 | 1217 | 0.79 | Deleted |
| 10 | 310.48 | 622.19 | 38 | 62 | 50 | 607 | 0.51 | Deleted |
| 11 | 340.73 | 682.69 | 74 | 72 | 57 | 729 | 0.68 | Unknown |
| 12 | 450.27 | 901.69 | 70 | 107 | 87 | 1295 | 1.12 | Deleted |
| 13 | 510.44 | 1022.00 | 17 | 58 | 47 | 515 | 0.67 | Deleted |
| 15 | 725.83 | 1452.66 | 62 | 71 | 57 | 606 | 1.26 | Unknown |
| 16 | 803.52 | 1607.98 | 34 | 69 | 56 | 613 | 1.09 | Deleted |

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Geo 13 / Solid

Sample ID: 0413013-3 Geo 13 Eff Cal (745)

```
-----  

Sampling Start: 01/01/2004 12:00:00 | Counting Start: 06/12/2004 09:45:49  

Sampling Stop: 01/01/2004 12:00:00 | Decay Time. . . . . 3.91E+003 Hrs  

Buildup Time. . . . . 0.00E+000 Hrs | Live Time . . . . . 3600 Sec  

Sample Size . . . . . 5.00E+002 g | Real Time . . . . . 3736 Sec  

Collection Efficiency . . . . . 1.0000 | Spc. File . . . . . 040911D03.SPC
```

```
-----  

Detector #: 3 (Detector 3)  

Energy(keV) = -0.85 + 0.500*Ch +-1.69E-07*Ch^2 + 6.12E-11*Ch^3 06/12/2004  

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004  

Where En = Sqrt(Energy in keV)
```

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.47 | 120.54 | 27507 | 469 | 273 | 15020 | 0.79 | a HiResid |
| 2 | 71.20 | 143.99 | 347 | 351 | 287 | 16617 | 0.84 | a |
| 3 | 72.92 | 147.44 | 974 | 252 | 201 | 9970 | 0.53 | b |
| 4 | 86.30 | 174.16 | 3246 | 840 | 684 | 51917 | 2.27 | a Wide Pk |
| 5 | 87.99 | 177.54 | 96920 | 733 | 318 | 18725 | 0.94 | b |
| 6 | 122.09 | 245.69 | 62847 | 602 | 274 | 13838 | 0.99 | a HiResid |
| 7 | 136.52 | 274.54 | 8351 | 386 | 280 | 13343 | 1.07 | a |
| 8 | 165.93 | 333.31 | 56542 | 572 | 262 | 11704 | 1.08 | a |
| 9 | 255.15 | 511.64 | 1340 | 227 | 176 | 6572 | 0.90 | a HiResid |
| 10 | 279.26 | 559.84 | 19056 | 354 | 183 | 6584 | 1.21 | a |
| 11 | 310.37 | 622.01 | 165 | 163 | 132 | 3973 | 0.88 | a |
| 12 | 391.75 | 784.69 | 36283 | 434 | 171 | 5428 | 1.38 | a HiResid |
| 13 | 511.05 | 1023.15 | 1033 | 271 | 217 | 6617 | 2.06 | a |
| 14 | 661.63 | 1324.15 | 42188 | 455 | 161 | 4783 | 1.66 | a HiResid |
| 15 | 692.31 | 1385.47 | 237 | 230 | 187 | 5630 | 2.13 | a |
| 16 | 698.05 | 1396.95 | 165 | 215 | 176 | 5197 | 1.91 | b NET< CL |
| 17 | 813.84 | 1628.37 | 581 | 196 | 156 | 4330 | 2.19 | a |
| 18 | 897.97 | 1796.51 | 42335 | 453 | 156 | 4485 | 1.99 | a HiResid |
| 19 | 1173.19 | 2346.38 | 46263 | 454 | 121 | 2483 | 2.21 | a HiResid |
| 20 | 1332.47 | 2664.48 | 41652 | 430 | 111 | 2040 | 2.43 | a HiResid |
| 21 | 1836.70 | 3670.50 | 25307 | 326 | 57 | 486 | 2.98 | a HiResid |

040911D03.SPC Analyzed by

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413013-3 Geo 13 Eff Cal (745)

Stds. Match Tolerance: 2.00 keV

Detector Number: 03 Calibration Date. . . 06/12/2004 09:45:49

Geometry File (D03)(Sh13).EFF ID. Geo 13 Eff Cal

Amount of Std. in Calib. Source: 500.000000 gm

Eff = 1 / [3.80e-03*En^-3.74e+00 + 1.52e+02*En^ 7.83e-01](Where En = Energy in MeV)) (Exponential)

| Pk. | Energy # (kev) | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|-----|-------------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 5.86e-03 | 4.05 | 6.11e-03 | 4.02 | 6.36e-03 |
| 2 | 88.04 | 1.86e-02 | -4.94 | 1.77e-02 | -2.14 | 1.73e-02 |
| 3 | 122.06 | 2.46e-02 | 3.72 | 2.55e-02 | -2.69 | 2.48e-02 |
| 4 | 165.85 | 2.45e-02 | 1.17 | 2.48e-02 | -1.48 | 2.44e-02 |
| 5 | 279.00 | 1.83e-02 | -3.06 | 1.78e-02 | -0.75 | 1.76e-02 |
| 6 | 391.68 | 1.41e-02 | -3.12 | 1.37e-02 | -0.89 | 1.36e-02 |
| 7 | 661.64 | 9.45e-03 | -3.75 | 9.11e-03 | -1.34 | 8.99e-03 |
| 8 | 898.02 | 6.96e-03 | 2.98 | 7.17e-03 | -1.64 | 7.06e-03 |
| 9 | 1173.21 | 5.73e-03 | 1.43 | 5.82e-03 | -1.90 | 5.71e-03 |
| 10 | 1332.48 | 5.12e-03 | 2.70 | 5.26e-03 | -2.03 | 5.16e-03 |
| 11 | 1836.01 | 3.98e-03 | 2.80 | 4.10e-03 | -2.34 | 4.00e-03 |

Calibration Results Saved.

Efficiency Calibration Verification

Std. #582 Det. : 3

| FROM CALIBRATION CERTIFICATE | | | |
|------------------------------|------|--------------|--------------|
| Isotope | Kev | Half Life(y) | Gamma's/Sec. |
| Am-241 | 59.9 | 432.0000 | 1307 |
| Cd-109 | 88 | 1.2666 | 1877 |
| Co-57 | 122 | 0.7441 | 957.7 |
| Ce-139 | 166 | 0.3768 | 1352 |
| Hg-203 | 279 | 0.1276 | 2882 |
| Sn-113 | 392 | 0.3151 | 1956 |
| Cs-137 | 662 | 30.0000 | 1333 |
| Y-88 | 898 | 0.2919 | 4861 |
| Co-60 | 1173 | 5.2714 | 2310 |
| Co-60 | 1332 | 5.2714 | 2320 |
| Y-88 | 1836 | 0.2919 | 5097 |

| FROM ANALYTICS LIB | Mass Fraction: | of Standard |
|--------------------|----------------|-------------|
| | 500 | g |
| | 0.3590 | |
| | 0.0361 | |
| | 0.8551 | |
| | 0.8035 | |
| | 0.7730 | |
| | 0.6490 | |
| | 0.8512 | |
| | 0.9340 | |
| | 1.0000 | |
| | 1.0000 | |
| | 0.9938 | |

| EXPECTED ACTIVITY | MEASURED ACTIVITY | | | | | |
|-------------------|-------------------|--------|--------|-------------|-------------|-------------|
| | DPS | pCi/g | Am-241 | pCi/g | % Recovery | |
| Am-241 | 3640.7 | 196.8 | | 203 | 103.2% | OK |
| Cd-109 | 51994.5 | 2810.5 | Cd-109 | 3010 | 107.1% | OK |
| Co-57 | 1120.0 | 60.5 | Co-57 | 55.8 | 92.2% | OK |
| Ce-139 | 1682.6 | 91.0 | Ce-139 | >5 Halfives | >5 Halfives | 5 Halfives |
| Hg-203 | 3728.3 | 201.5 | Hg-203 | >5 Halfives | >5 Halfives | 5 Halfives |
| Sr-113 | 3013.9 | 162.9 | Sr-113 | >5 Halfives | >5 Halfives | 5 Halfives |
| Cs-137 | 1566.0 | 84.6 | Cs-137 | 87.2 | 103.0% | OK |
| Y-88 | 5204.5 | 281.3 | Y-88 | >5 Halfives | >5 Halfives | 5 Halfives |
| Co-60 | 2310.0 | 124.9 | Co-60 | 122 | 97.7% | OK |
| Co-60 | 2320.0 | 125.4 | Co-60 | 122 | 97.3% | OK |
| Y-88 | 5128.8 | 277.2 | Y-88 | >5 Halfives | >5 Halfives | >5 Halfives |

000493

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0413013-3A Geo 13 Cal Ver(582)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 04/01/2001 12:00:00 | Counting Start: | 06/12/2004 11:07:28 |
| Sampling Stop: | 04/01/2001 12:00:00 | Decay Time | 2.80E+004 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00E+002 g | Real Time | 1898 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040912D03.SPC |

Detector #: 3 (Detector 3)

Energy(keV) = -0.85 + 0.500*Ch +-1.69E-07*Ch^2 + 6.12E-11*Ch^3 06/12/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 59.52 | 120.66 | 14741 | 297 | 141 | 3663 | 0.91 | a |
| 2 | 88.01 | 177.58 | 11181 | 251 | 112 | 2309 | 0.92 | a |
| 3 | 122.08 | 245.68 | 2046 | 138 | 86 | 1497 | 0.85 | a HiResid |
| 4 | 136.29 | 274.07 | 195 | 149 | 121 | 2301 | 1.27 | a |
| 5 | 166.05 | 333.55 | 169 | 115 | 93 | 1583 | 0.91 | a |
| 6 | 188.81 | 379.04 | 84 | 88 | 71 | 1123 | 0.70 | a |
| 7 | 244.78 | 490.91 | 132 | 136 | 111 | 2129 | 1.51 | a |
| 8 | 336.68 | 674.61 | 57 | 77 | 62 | 882 | 0.74 | a NET< CL |
| 9 | 347.35 | 695.94 | 55 | 87 | 71 | 1059 | 0.91 | a NET< CL |
| 10 | 392.05 | 785.29 | 91 | 96 | 77 | 1174 | 1.13 | a |
| 11 | 460.61 | 922.35 | 57 | 66 | 53 | 698 | 0.72 | a |
| 12 | 661.63 | 1324.15 | 20938 | 302 | 70 | 896 | 1.61 | a HiResid |
| 13 | 1173.20 | 2346.40 | 15508 | 259 | 58 | 576 | 2.32 | a HiResid |
| 14 | 1332.47 | 2664.48 | 13999 | 239 | 30 | 156 | 2.36 | a HiResid |

040912D03.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET030611.BKG (0418003-13 Weekly Bkg)

Bkg.File Detector #: 3

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|

040912D03.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0413013-3A Geo 13 Cal Ver(582)

| | | | |
|---------------------------------|---------------------|---------------------------------|---------------------|
| Sampling Start: | 04/01/2001 12:00:00 | Counting Start: | 06/12/2004 11:07:28 |
| Sampling Stop: | 04/01/2001 12:00:00 | Decay Time | 2.80e+004 Hrs |
| Buildup Time | 0.00e+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00e+002 g | Real Time | 1898 Sec |
| Collection Efficiency | 1.0000 | Spectrum File | 040912D03.SPC |
| Cr. Level Confidence Interval: | 95 % | Det. Limit Confidence Interval: | 95 % |

Detector #: 3 (Detector 3)

Efficiency File: (D03) (Sh13).EFF (Geo 13 Eff Cal)

Eff.=1/[3.80E-03*En^-3.74E+00 + 1.52E+02*En^7.83E-01] 06/12/2004

Library File: . . . ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

| Nuclide | N | | Concentration (pCi/g) | MDA | Critical Level | Halflife (hrs) | |
|---------|-----------------|--------|--------------------------|-----------|-------------------|-------------------|----------|
| | ENERGY (keV) | E T | | | | | |
| Am-241 | 59.54 | | 2.03E+02 +- 4.08E+00 | 3.91E+00 | 1.93E+00 | 3.79E+06 | |
| Cd-109 | 88.02 | | 3.01E+03 +- 6.77E+01 | 6.09E+01 | 3.01E+01 | 1.11E+04 | |
| Co-57 | 122.07 | | 5.58E+01 +- 3.78E+00 | 4.78E+00 | 2.35E+00 | 6.50E+03 | |
| Cs-137 | 661.62 | | 8.72E+01 +- 1.26E+00 | 5.91E-01 | 2.90E-01 | 2.64E+05 | |
| Co-60 | Average:x | | 1.22E+02 +- 1.46E+00 | | | 4.62E+04 | |
| | 1173.21 | | 1.22E+02 +- 2.04E+00 | 9.36E-01 | 4.57E-01 | 4.62E+04 | |
| | 1332.48 | | 1.22E+02 +- 2.08E+00 | 5.50E-01 | 2.63E-01 | 4.62E+04 | |
| Ce-139 | 165.85 | | MDA | | 7.59E+01r | 3.72E+01 | 3.30E+03 |
| Hg-203 | 279.18 | | MDA | | 1.27E+07 | 6.26E+06 | 1.12E+03 |
| Sn-113 | 391.68 | | MDA | | 4.18E+02r | 2.04E+02 | 2.76E+03 |
| Y-88 | 898.02 | | MDA | | 1.43E+03 | 7.02E+02 | 2.56E+03 |

MEASURED TOTAL: 3.48E+03 +- 7.83E+01 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 4 | 136.29 | 274.07 | 195 | 149 | 121 | 2301 | 1.27 | Unknown |
| 5 | 166.05 | 333.55 | 169 | 116 | 93 | 1583 | 0.91 | Unknown |
| 6 | 188.81 | 379.04 | 84 | 88 | 71 | 1123 | 0.70 | Unknown |
| 7 | 244.78 | 490.91 | 132 | 136 | 111 | 2129 | 1.51 | Unknown |
| 8 | 336.68 | 674.61 | 57 | 77 | 62 | 882 | 0.74 | Deleted |

040912D03.SPC Analyzed by

===== UNKNOWN, SUM or ESCAPE PEAKS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 9 | 347.35 | 695.94 | 55 | 87 | 71 | 1059 | 0.91 | Deleted |
| 10 | 392.05 | 785.29 | 91 | 96 | 77 | 1174 | 1.13 | Unknown |
| 11 | 460.61 | 922.34 | 57 | 66 | 53 | 698 | 0.72 | Unknown |

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0413013-8 Geo 13 Eff Cal (745)

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 01/01/2004 12:00:00 | Counting Start: | 06/14/2004 07:04:56 |
| Sampling Stop: | 01/01/2004 12:00:00 | Decay Time. | 3.96E+003 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 3600 Sec |
| Sample Size . | 5.00E+002 g | Real Time . | 3811 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 040948D08.SPC |

Detector #: 8 (Detector 8)
 Energy(keV) = -0.33 + 0.500*Ch +-1.67E-07*Ch^2 + 9.67E-11*Ch^3 06/14/2004
 FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 49.45 | 99.53 | 2763 | 554 | 447 | 31715 | 1.29 | a Wide Pk |
| 2 | 59.49 | 119.61 | 108256 | 740 | 278 | 17123 | 0.72 | a HiResid |
| 3 | 65.07 | 130.77 | 895 | 578 | 473 | 33065 | 1.48 | a Wide Pk |
| 4 | 66.03 | 132.67 | 958 | 372 | 302 | 18369 | 0.90 | b |
| 5 | 67.60 | 135.81 | 4957 | 840 | 681 | 51434 | 2.27 | c |
| 6 | 70.60 | 141.82 | 3940 | 638 | 515 | 36738 | 1.70 | d |
| 7 | 72.81 | 146.23 | 2551 | 432 | 345 | 22043 | 0.97 | e |
| 8 | 82.36 | 165.34 | 4222 | 761 | 617 | 46859 | 1.95 | a HiResid Wide Pk |
| 9 | 84.83 | 170.27 | 6310 | 887 | 718 | 54426 | 2.37 | b HiResid |
| 10 | 88.06 | 176.73 | 153133 | 868 | 309 | 17620 | 0.92 | c HiResid |
| 11 | 122.02 | 244.64 | 72765 | 608 | 231 | 10771 | 0.88 | a |
| 12 | 136.44 | 273.47 | 9072 | 344 | 236 | 10286 | 0.97 | a |
| 13 | 165.83 | 332.25 | 56745 | 544 | 216 | 8608 | 0.92 | a |
| 14 | 198.97 | 398.51 | 606 | 248 | 200 | 7402 | 0.99 | a |
| 15 | 255.06 | 510.69 | 1395 | 202 | 154 | 4793 | 0.87 | a |
| 16 | 279.16 | 558.87 | 18279 | 349 | 181 | 5614 | 1.07 | a |
| 17 | 310.69 | 621.93 | 204 | 206 | 168 | 4823 | 1.21 | a |
| 18 | 348.56 | 697.66 | 73 | 131 | 107 | 2521 | 0.58 | a NET< CL |
| 19 | 391.65 | 783.82 | 35016 | 412 | 142 | 3979 | 1.17 | a |
| 20 | 510.87 | 1022.21 | 805 | 253 | 203 | 5775 | 2.09 | a HiResid |
| 21 | 661.59 | 1323.56 | 40812 | 433 | 127 | 3334 | 1.37 | a HiResid |
| 22 | 814.09 | 1628.37 | 721 | 148 | 113 | 2491 | 1.54 | a HiResid |
| 23 | 897.86 | 1795.78 | 41524 | 438 | 132 | 3220 | 1.58 | a HiResid |

040948D08.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 24 | 956.94 | 1913.80 | 163 | 214 | 174 | 4682 | 2.35 | a NET< CL |
| 25 | 1173.14 | 2345.54 | 46485 | 444 | 88 | 1493 | 1.83 | a HiResid |
| 26 | 1324.91 | 2648.40 | 965 | 137 | 100 | 1392 | 3.22 | a HiResid |
| 27 | 1332.43 | 2663.41 | 42294 | 419 | 67 | 835 | 1.95 | b HiResid |
| 28 | 1836.98 | 3668.42 | 25254 | 320 | 34 | 193 | 2.29 | a HiResid |

040948D08.SPC Analyzed by

SEEKER

C A L I B R A T I O N R E S U L T S Version 2.0.4

Sample ID: 0413013-8 Geo 13 Eff Cal (745)

Stds. Match Tolerance: 2.00 keV

Detector Number: 08 Calibration Date. . . 06/14/2004 07:04:56

Geometry File (D08)(Sh13).EFF ID. Geo 13 Eff Cal

Amount of Std. in Calib. Source: 500.000000 gm

Eff = 1 / [9.63e-02*En^(-2.00e+00) + 1.53e+02*En^(8.02e-01)]

(Where En = Energy in MeV)) (Exponential)

| Pk. | Energy # | Measured Efficiency | % Difference | Calculated Efficiency | % Difference | Prev.Calc. Efficiency |
|-----|-------------|------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1 | 59.50 | 2.31e-02 | 0.29 | 2.31e-02 | -0.00 | 2.31e-02 |
| 2 | 88.04 | 2.94e-02 | -0.82 | 2.92e-02 | -0.00 | 2.92e-02 |
| 3 | 122.06 | 2.86e-02 | 0.44 | 2.87e-02 | -0.00 | 2.87e-02 |
| 4 | 165.85 | 2.48e-02 | 1.20 | 2.51e-02 | -0.00 | 2.51e-02 |
| 5 | 279.00 | 1.81e-02 | -1.66 | 1.78e-02 | -0.00 | 1.78e-02 |
| 6 | 391.68 | 1.38e-02 | -0.54 | 1.37e-02 | -0.00 | 1.37e-02 |
| 7 | 661.64 | 9.14e-03 | -0.72 | 9.08e-03 | -0.00 | 9.08e-03 |
| 8 | 898.02 | 6.91e-03 | 2.89 | 7.11e-03 | -0.00 | 7.11e-03 |
| 9 | 1173.21 | 5.76e-03 | -0.35 | 5.74e-03 | -0.00 | 5.74e-03 |
| 10 | 1332.48 | 5.20e-03 | -0.33 | 5.19e-03 | -0.00 | 5.19e-03 |
| 11 | 1836.01 | 4.02e-03 | -0.22 | 4.01e-03 | -0.00 | 4.01e-03 |

Calibration Results Saved.

Efficiency Calibration Verification

Std. #582

Det. : 8

| FROM CALIBRATION CERTIFICATE | | | FROM ANALYTICS LIB | | |
|------------------------------|------|--------------|--------------------|--------|-------------|
| Isotope | KeV | Half Life(y) | Gamma/Sec. | Mass | of Standard |
| Am-241 | 59.9 | 432.0000 | 1307 | 0.3590 | 9 |
| Cd-109 | 88 | 1.2666 | 1877 | 0.0361 | |
| Co-57 | 122 | 0.7441 | 957.7 | 0.8551 | |
| Ce-139 | 166 | 0.3768 | 1352 | 0.8035 | |
| Hg-203 | 279 | 0.1276 | 2882 | 0.7730 | |
| Sn-113 | 392 | 0.3151 | 1956 | 0.6490 | |
| Cs-137 | 662 | 30.0000 | 1333 | 0.8512 | |
| Y-88 | 898 | 0.2919 | 4861 | 0.9340 | |
| Co-60 | 1173 | 5.2714 | 2310 | 1.0000 | |
| Co-60 | 1332 | 5.2714 | 2320 | 1.0000 | |
| Y-88 | 1836 | 0.2919 | 5097 | 0.9938 | |

| EXPECTED ACTIVITY | | | MEASURED ACTIVITY | | |
|-------------------|---------|--------|-------------------|--------------|--------------|
| | DPS | pCi/g | | pCi/g | % Recovery |
| Am-241 | 3640.7 | 196.8 | Am-241 | 210 | 106.7% |
| Cd-109 | 51994.5 | 2810.5 | Cd-109 | 2840 | 101.0% |
| Co-57 | 1120.0 | 60.5 | Co-57 | 64.3 | 106.2% |
| Ce-139 | 1682.6 | 91.0 | Ce-139 | >5 Halflives | >5 Halflives |
| Hg-203 | 3728.3 | 201.5 | Hg-203 | >5 Halflives | >5 Halflives |
| Sn-113 | 3013.9 | 162.9 | Sn-113 | >5 Halflives | >5 Halflives |
| Cs-137 | 1566.0 | 84.6 | Cs-137 | 90.1 | 106.4% |
| Y-88 | 5204.5 | 281.3 | Y-88 | >5 Halflives | >5 Halflives |
| Co-60 | 2310.0 | 124.9 | Co-60 | 128 | 102.5% |
| Co-60 | 2320.0 | 125.4 | Co-60 | 128 | 102.1% |
| Y-88 | 5128.8 | 277.2 | Y-88 | >5 Halflives | >5 Halflives |

000561

 SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
 GammaScan

 Geo 13 / Solid

Sample ID: 0413013-8A Geo 13 Cal Ver (582)

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 04/01/2001 12:00:00 | Counting Start: | 06/14/2004 08:11:56 |
| Sampling Stop: | 04/01/2001 12:00:00 | Decay Time | 2.81E+004 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 1800 Sec |
| Sample Size | 5.00E+002 g | Real Time | 1841 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040949D08.SPC |

Detector #: 8 (Detector 8)
 Energy(keV) = -0.33 + 0.500*Ch +-1.67E-07*Ch^2 + 9.67E-11*Ch^3 06/14/2004
 FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

===== PEAK SEARCH RESULTS =====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 49.30 | 99.22 | 1693 | 360 | 288 | 12291 | 1.51 | a Wide Pk |
| 2 | 59.49 | 119.61 | 57762 | 530 | 183 | 6747 | 0.74 | a HiResid |
| 3 | 88.03 | 176.67 | 17375 | 292 | 103 | 2146 | 0.87 | a |
| 4 | 121.99 | 244.58 | 2637 | 145 | 84 | 1431 | 0.88 | a |
| 5 | 136.50 | 273.59 | 359 | 131 | 103 | 1807 | 1.11 | a |
| 6 | 165.94 | 332.46 | 277 | 147 | 118 | 2064 | 1.42 | a |
| 7 | 316.96 | 634.46 | 50 | 56 | 45 | 497 | 0.57 | a |
| 8 | 515.83 | 1032.13 | 7 | 52 | 43 | 445 | 0.69 | a NET< CL |
| 9 | 661.53 | 1323.45 | 21564 | 301 | 54 | 600 | 1.39 | a |
| 10 | 762.88 | 1526.04 | 52 | 69 | 56 | 606 | 1.47 | a NET< CL |
| 11 | 1173.02 | 2345.31 | 16033 | 259 | 44 | 377 | 1.79 | a HiResid |
| 12 | 1332.30 | 2663.14 | 14530 | 242 | 20 | 74 | 1.94 | a HiResid |

040949D08.SPC Analyzed by

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Background File:.. DET080611.BKG (0418003-18 Weekly Bkg)

Bkg.File Detector #: 8

=====
BACKGROUND SUBTRACT RESULTS
=====

| PK# | ENERGY (keV) | OLD NET COUNTS | OLD UN- CERTAINTY | OLD CR.LEVEL | NEW NET COUNTS | NEW UN- CERTAINTY | NEW CR.LEVEL | NEW FLAG |
|-----|-----------------|-------------------|----------------------|-----------------|-------------------|----------------------|-----------------|-------------|
| 3 | 88.03 | 17375 | 292 | 103 | 17373 | 292 | 103 | |

040949D08.SPC Analyzed by

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

Geo 13 / Solid

Sample ID: 0413013-8A Geo 13 Cal Ver (582

Sampling Start: 04/01/2001 12:00:00 | Counting Start: 06/14/2004 08:11:56
Sampling Stop: 04/01/2001 12:00:00 | Decay Time. 2.81e+004 Hrs
Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
Sample Size 5.00e+002 g | Real Time 1841 Sec
Collection Efficiency 1.0000 | Spectrum File 040949D08.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 8 (Detector 8)
Efficiency File: (D08) (Sh13).EFF (Geo 13 Eff Cal)
Eff.=1/[9.63E-02*En^-2.00E+00 + 1.53E+02*En^8.02E-01] 06/14/2004

Library File: . . . ANALYTICAL.LIB (Analytical)

=====
MEASURED or MDA CONCENTRATIONS
=====

| Nuclide | ENERGY (keV) | E T | Concentration (pCi/g) | Critical MDA | Halflife Level (hrs) | |
|---------|--------------|----------|-----------------------|--------------|----------------------|----------|
| Am-241 | 59.54 | 2.10E+02 | +- 1.92E+00 | 1.34E+00 | 6.65E-01 | 3.79E+06 |
| Cd-109 | 88.02 | 2.84E+03 | +- 4.78E+01 | 3.42E+01 | 1.69E+01 | 1.11E+04 |
| Co-57 | 122.07 | 6.43E+01 | +- 3.54E+00 | 4.17E+00 | 2.05E+00 | 6.50E+03 |
| Cs-137 | 661.62 | 9.01E+01 | +- 1.26E+00 | 4.63E-01 | 2.26E-01 | 2.64E+05 |
| Co-60 | Average:x | 1.28E+02 | +- 1.48E+00 | | | 4.62E+04 |
| | 1173.21 | 1.28E+02 | +- 2.06E+00 | 7.26E-01 | 3.52E-01 | 4.62E+04 |
| | 1332.48 | 1.28E+02 | +- 2.14E+00 | 3.77E-01 | 1.77E-01 | 4.62E+04 |
| Ce-139 | 165.85 | MDA | | 9.49E+01 | 4.67E+01 | 3.30E+03 |
| Hg-203 | 279.18 | MDA | | 1.34E+07 | 6.60E+06 | 1.12E+03 |
| Sn-113 | 391.68 | MDA | | 5.81E+02 | 2.85E+02 | 2.76E+03 |
| Y-88 | 898.02 | MDA | | 1.35E+03 | 6.64E+02 | 2.56E+03 |

MEASURED TOTAL: 3.34E+03 +- 5.60E+01 pCi/g

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|-------|--------------|-----------------|------------|---------------|-------------|------------|------------|---------|
| 1 | 49.30 | 99.22 | 1693 | 360 | 288 | 12291 | 1.51 | Unknown |
| 5 | 136.50 | 273.59 | 359 | 131 | 103 | 1807 | 1.11 | Unknown |
| 6 | 165.94 | 332.46 | 277 | 147 | 118 | 2064 | 1.42 | Unknown |
| 7 | 316.96 | 634.46 | 50 | 56 | 45 | 497 | 0.57 | Unknown |
| 8 | 515.83 | 1032.13 | 7 | 52 | 43 | 445 | 0.69 | Deleted |

040949D08.SPC Analyzed by

=====
UNKNOWN, SUM or ESCAPE PEAKS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|---------------|------------------|----------------|---------------|---------------|---------|
| 10 | 762.88 | 1526.04 | 52 | 69 | 56 | 606 | 1.47 | Deleted |

Gamma Spectroscopy

Quality Control Data

Weekly Background Checks

Gamma Spectrometer Calibration Log

Date: 6-25-04Reviewed By/Date: JP 6/25/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | MC | JP | MC | MC | | | | | |
| 2. | | ↓ | JP | ↓ | ↓ | | | | | |
| 3. | | ↓ | JP | ↓ | ↓ | | | | | |
| 4. | | ↓ | JP | ↓ | ↓ | | | | | |
| 5. | MC | / | / | / | / | | | | | |
| 6. | ↓ | / | / | / | / | | | | | |
| 7. | MC | JP | MC | MC | | | | | | |
| 8. | | ↓ | JP | ↓ | ↓ | | | | | |
| 9. | MC | / | / | / | / | | | | | |
| 10. | MC | JP | MC | / | | GO FWHM 1332 CENT. | JP | | GAIN ADJUST. | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

478827 A

Form 754r9.frm (9/19/2001)

000507

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0418003-31 Weekly Background

| | | | |
|---------------------------------|---------------------|---------------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:05:00 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time. | 6.08E+000 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60160 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041500D01.SPC |

Detector #: 1 (Detector 1)

Energy(keV) = -1.07 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004

FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 53.96 | 109.95 | 178 | 177 | 144 | 3599 | 1.44 | a |
| 2 | 63.32 | 128.64 | 387 | 182 | 146 | 3961 | 1.60 | a |
| 3 | 66.15 | 134.29 | 735 | 186 | 146 | 3961 | 1.57 | b |
| 4 | 92.61 | 187.15 | 997 | 171 | 130 | 3145 | 1.63 | a |
| 5 | 139.69 | 281.20 | 334 | 118 | 92 | 1847 | 1.21 | a |
| 6 | 143.82 | 289.46 | 106 | 114 | 92 | 1847 | 1.11 | b |
| 7 | 185.80 | 373.33 | 718 | 142 | 108 | 2285 | 1.46 | a |
| 8 | 198.27 | 398.23 | 649 | 146 | 112 | 2540 | 1.57 | a |
| 9 | 238.69 | 479.00 | 516 | 130 | 100 | 2106 | 1.42 | a |
| 10 | 295.18 | 591.84 | 89 | 87 | 70 | 1194 | 1.02 | a |
| 11 | 338.01 | 677.40 | 109 | 126 | 102 | 2015 | 1.81 | a |
| 12 | 351.67 | 704.69 | 316 | 130 | 103 | 1961 | 1.95 | a |
| 13 | 510.93 | 1022.85 | 4266 | 207 | 132 | 2402 | 3.28 | a |
| 14 | 558.38 | 1117.64 | 481 | 106 | 79 | 1215 | 1.84 | a |
| 15 | 569.90 | 1140.65 | 193 | 133 | 107 | 1871 | 2.44 | a |
| 16 | 583.07 | 1166.97 | 380 | 124 | 96 | 1587 | 2.32 | a |
| 17 | 599.92 | 1200.63 | 1390 | 265 | 209 | 4208 | 5.51 | a Wide Pk |
| 18 | 608.04 | 1216.84 | 1315 | 302 | 241 | 4950 | 6.60 | b |
| 19 | 803.19 | 1606.71 | 364 | 102 | 78 | 1028 | 2.23 | a |
| 20 | 836.14 | 1672.53 | 126 | 115 | 93 | 1308 | 2.76 | a |
| 21 | 897.92 | 1795.96 | 101 | 97 | 78 | 991 | 2.39 | a |
| 22 | 911.28 | 1822.65 | 384 | 84 | 61 | 722 | 1.88 | a |
| 23 | 961.68 | 1923.34 | 168 | 86 | 67 | 772 | 2.26 | a |
| 24 | 969.01 | 1937.97 | 255 | 79 | 60 | 662 | 1.89 | b |

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 1042.96 | 2085.71 | 118 | 79 | 62 | 686 | 2.15 | a |
| 26 | 1120.11 | 2239.84 | 98 | 56 | 43 | 413 | 1.35 | a |
| 27 | 1326.88 | 2652.90 | 53 | 56 | 44 | 380 | 1.73 | a |
| 28 | 1460.71 | 2920.25 | 2162 | 112 | 52 | 423 | 2.62 | a |
| 29 | 1729.82 | 3457.87 | 60 | 53 | 42 | 284 | 2.39 | a |
| 30 | 1764.48 | 3527.12 | 188 | 49 | 33 | 204 | 1.93 | a |

041500D01.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0418003-31 Weekly Background

Detector # 1 Background Q.C. Analysis for 06/25/2004 18:05:00

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|----|--------------------|--------|--------------|-------------|--------|
| 10 | 40-> 50 keV Bkg | 10.204 | Pass | Pass | N.A. |
| 11 | 50-> 150 keV Bkg | 66.310 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 81.690 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 97.875 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 60.917 | Pass | Pass | N.A. |
| 15 | 150-> 250 keV Bkg | 51.369 | Pass | Pass | N.A. |

Q.C. Results Saved.

041072D02.SPC Analyzed by J

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

Weekly Background Check

Sample ID: 0418003-32 Weekly Background

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:04:39 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time | 6.08E+000 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60160 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041072D02.SPC |

Detector #: 2 (Detector 2)

Energy (keV) = -0.66 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004

FWHM (keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where $E_n = \text{Sqrt}(\text{Energy in keV})$

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/40000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.66 | 94.63 | 47 | 68 | 55 | 611 | 0.78 | a NET< CL |
| 2 | 49.45 | 100.21 | 17 | 58 | 47 | 489 | 0.58 | b NET< CL |
| 3 | 53.34 | 107.99 | 12 | 37 | 30 | 244 | 0.35 | c NET< CL |
| 4 | 63.40 | 128.10 | 181 | 63 | 47 | 494 | 0.72 | a |
| 5 | 66.38 | 134.07 | 133 | 71 | 55 | 618 | 0.88 | b |
| 6 | 74.86 | 151.02 | 139 | 71 | 55 | 606 | 0.85 | a |
| 7 | 77.16 | 155.61 | 116 | 79 | 63 | 727 | 0.90 | b |
| 8 | 84.67 | 170.64 | 50 | 37 | 28 | 215 | 0.39 | a |
| 9 | 86.98 | 175.25 | 77 | 74 | 59 | 645 | 0.98 | b |
| 10 | 89.84 | 180.97 | 18 | 54 | 44 | 430 | 0.63 | c NET< CL |
| 11 | 92.66 | 186.62 | 420 | 83 | 59 | 645 | 0.98 | d |
| 12 | 116.16 | 233.61 | 40 | 43 | 34 | 284 | 0.50 | a |
| 13 | 128.59 | 258.46 | 28 | 43 | 35 | 296 | 0.45 | a NET< CL |
| 14 | 139.91 | 281.11 | 106 | 63 | 49 | 476 | 0.85 | a |
| 15 | 143.67 | 288.61 | 80 | 78 | 62 | 666 | 1.12 | b |
| 16 | 163.37 | 328.02 | 16 | 42 | 34 | 286 | 0.43 | a NET< CL |
| 17 | 185.81 | 372.88 | 260 | 69 | 50 | 503 | 0.77 | a |
| 18 | 190.87 | 383.00 | 15 | 42 | 34 | 290 | 0.44 | a NET< CL |
| 19 | 198.40 | 398.06 | 166 | 65 | 50 | 494 | 0.82 | a |
| 20 | 238.46 | 478.18 | 236 | 64 | 46 | 423 | 0.77 | a |
| 21 | 295.40 | 592.03 | 91 | 107 | 86 | 871 | 2.08 | a Wide Pk |
| 22 | 338.24 | 677.70 | 63 | 69 | 55 | 484 | 1.29 | a |
| 23 | 351.86 | 704.92 | 141 | 58 | 43 | 347 | 1.02 | a |
| 24 | 356.04 | 713.28 | 30 | 34 | 27 | 174 | 0.54 | b |

041072D02.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 511.06 | 1023.28 | 1368 | 117 | 74 | 709 | 2.50 | a Wide Pk |
| 26 | 558.53 | 1118.21 | 184 | 54 | 39 | 260 | 1.43 | a |
| 27 | 569.88 | 1140.92 | 55 | 52 | 41 | 311 | 1.24 | a |
| 28 | 583.28 | 1167.69 | 146 | 50 | 36 | 249 | 1.18 | a |
| 29 | 609.48 | 1220.09 | 142 | 69 | 53 | 460 | 1.57 | a |
| 30 | 639.66 | 1280.45 | 22 | 29 | 22 | 124 | 0.67 | a NET< CL |
| 31 | 669.77 | 1340.66 | 46 | 45 | 35 | 231 | 1.38 | a |
| 32 | 803.08 | 1607.24 | 129 | 43 | 30 | 170 | 1.29 | a |
| 33 | 859.42 | 1719.90 | 32 | 43 | 34 | 211 | 1.66 | a NET< CL |
| 34 | 898.98 | 1799.00 | 40 | 42 | 33 | 190 | 1.77 | a |
| 35 | 911.35 | 1823.75 | 62 | 36 | 27 | 146 | 1.24 | a |
| 36 | 961.89 | 1924.80 | 66 | 43 | 33 | 185 | 2.01 | a |
| 37 | 968.90 | 1938.82 | 63 | 34 | 24 | 123 | 1.25 | b |
| 38 | 1213.48 | 2427.92 | 19 | 24 | 18 | 76 | 1.17 | a |
| 39 | 1460.71 | 2922.29 | 191 | 35 | 18 | 61 | 1.74 | a |
| 40 | 1764.47 | 3529.71 | 29 | 18 | 12 | 32 | 1.16 | a |

041072D02.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0418003-32 Weekly Background

Detector # 2 Background Q.C. Analysis for 06/25/2004 18:04:39

| # | Parameter | Value | n Sigma Test | Bounds Test | T- Test |
|----|--------------------|--------|-----------------|----------------|------------|
| 10 | 50-> 150 keV Bkg | 22.166 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 19.121 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 27.479 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 28.486 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 16.074 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 2.684 | Pass | Pass | N.A. |

Q.C. Results Saved.

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0418003-33 Weekly Background

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:04:42 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time | 6.08E+000 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60160 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041070D03.SPC |

Detector #: 3 (Detector 3)
 Energy(keV) = -0.85 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004
 FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 1 | 46.62 | 94.89 | 104 | 92 | 74 | 932 | 1.11 | a |
| 2 | 63.20 | 128.02 | 204 | 77 | 59 | 694 | 0.80 | a HiResid |
| 3 | 66.12 | 133.87 | 210 | 106 | 84 | 1111 | 1.26 | b HiResid |
| 4 | 69.76 | 141.14 | 19 | 51 | 41 | 417 | 0.51 | c NET< CL HiResid |
| 5 | 74.84 | 151.28 | 134 | 75 | 59 | 691 | 0.75 | a |
| 6 | 77.07 | 155.75 | 121 | 75 | 59 | 691 | 0.74 | b |
| 7 | 84.41 | 170.42 | 79 | 97 | 78 | 971 | 1.23 | a |
| 8 | 92.67 | 186.92 | 523 | 88 | 62 | 709 | 1.06 | a |
| 9 | 139.99 | 281.50 | 86 | 57 | 44 | 430 | 0.61 | a |
| 10 | 144.09 | 289.70 | 54 | 73 | 59 | 645 | 0.99 | b NET< CL |
| 11 | 185.81 | 373.09 | 330 | 79 | 58 | 620 | 1.01 | a |
| 12 | 198.42 | 398.29 | 212 | 88 | 68 | 732 | 1.37 | a |
| 13 | 205.24 | 411.93 | 13 | 43 | 35 | 303 | 0.56 | a NET< CL |
| 14 | 238.73 | 478.86 | 209 | 68 | 50 | 508 | 0.89 | a |
| 15 | 295.56 | 592.43 | 109 | 81 | 65 | 689 | 1.56 | a |
| 16 | 338.74 | 678.74 | 62 | 54 | 43 | 382 | 1.06 | a |
| 17 | 352.05 | 705.34 | 184 | 68 | 52 | 494 | 1.24 | a |
| 18 | 399.56 | 800.30 | 32 | 43 | 34 | 266 | 0.80 | a NET< CL |
| 19 | 511.15 | 1023.34 | 1630 | 120 | 73 | 721 | 2.74 | a Wide Pk |
| 20 | 558.62 | 1118.22 | 123 | 47 | 34 | 252 | 1.10 | a |
| 21 | 569.58 | 1140.13 | 86 | 80 | 64 | 586 | 2.61 | a Wide Pk |
| 22 | 583.39 | 1167.72 | 182 | 62 | 45 | 364 | 1.72 | a |
| 23 | 609.64 | 1220.18 | 104 | 62 | 48 | 446 | 1.54 | a |

041070D03.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 24 | 693.77 | 1388.34 | 117 | 77 | 61 | 545 | 2.44 | a |
| 25 | 803.39 | 1607.43 | 108 | 41 | 30 | 193 | 1.30 | a |
| 26 | 911.61 | 1823.73 | 81 | 47 | 36 | 233 | 1.97 | a |
| 27 | 962.38 | 1925.21 | 61 | 40 | 30 | 181 | 1.67 | a |
| 28 | 1001.14 | 2002.66 | 27 | 33 | 26 | 139 | 1.49 | a |
| 29 | 1014.86 | 2030.09 | 33 | 30 | 23 | 122 | 1.19 | a |
| 30 | 1460.95 | 2921.69 | 250 | 44 | 25 | 110 | 2.23 | a |
| 31 | 1764.82 | 3529.03 | 37 | 41 | 32 | 128 | 3.85 | a |

041070D03.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0418003-33 Weekly Background

Detector # 3 Background Q.C. Analysis for 06/25/2004 18:04:42

| # | Parameter | Value | n Sigma Test | Bounds Test | T- Test |
|----|--------------------|--------|-----------------|----------------|------------|
| 10 | 50-> 150 keV Bkg | 24.363 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 20.196 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 29.458 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 30.761 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 17.558 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 3.062 | Pass | Pass | N.A. |

Q.C. Results Saved.

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0418003-34 Weekly Background

| | | | |
|-------------------------|---------------------|-----------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:04:45 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time. | 6.08E+000 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time . | 60000 Sec |
| Sample Size . | 1.00E+000 L | Real Time . | 60160 Sec |
| Collection Efficiency . | 1.0000 | Spc. File . | 041130D04.SPC |

Detector #: 4 (Detector 4)

Energy(keV) = -1.07 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004

FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.69 | 95.45 | 46 | 50 | 40 | 390 | 0.41 | a |
| 2 | 53.63 | 109.32 | 29 | 37 | 29 | 241 | 0.35 | a NET< CL |
| 3 | 63.19 | 128.44 | 148 | 53 | 39 | 371 | 0.48 | a Wide Pk |
| 4 | 66.39 | 134.83 | 177 | 81 | 63 | 741 | 0.92 | b |
| 5 | 70.38 | 142.80 | 110 | 135 | 110 | 1482 | 2.01 | c |
| 6 | 72.56 | 147.16 | 73 | 69 | 55 | 618 | 0.81 | d |
| 7 | 74.86 | 151.75 | 134 | 71 | 55 | 618 | 0.74 | e |
| 8 | 77.15 | 156.33 | 154 | 90 | 71 | 865 | 1.17 | f |
| 9 | 86.99 | 176.00 | 5 | 36 | 29 | 236 | 0.39 | a NET< CL |
| 10 | 90.00 | 182.00 | 8 | 36 | 29 | 236 | 0.38 | b NET< CL |
| 11 | 92.54 | 187.09 | 358 | 76 | 54 | 591 | 0.85 | c |
| 12 | 115.85 | 233.66 | 47 | 44 | 34 | 285 | 0.41 | a |
| 13 | 139.85 | 281.63 | 115 | 48 | 35 | 310 | 0.41 | a |
| 14 | 148.13 | 298.18 | 32 | 42 | 33 | 271 | 0.42 | a NET< CL |
| 15 | 172.63 | 347.15 | 46 | 60 | 48 | 463 | 0.77 | a NET< CL |
| 16 | 185.65 | 373.17 | 263 | 67 | 48 | 464 | 0.82 | a |
| 17 | 198.22 | 398.28 | 167 | 63 | 48 | 456 | 0.88 | a |
| 18 | 238.48 | 478.75 | 185 | 62 | 46 | 418 | 0.80 | a |
| 19 | 284.06 | 569.84 | 21 | 58 | 47 | 414 | 1.03 | a NET< CL |
| 20 | 338.23 | 678.09 | 53 | 49 | 38 | 298 | 0.85 | a |
| 21 | 351.90 | 705.42 | 131 | 69 | 54 | 453 | 1.30 | a |
| 22 | 446.20 | 893.88 | 30 | 39 | 31 | 212 | 0.74 | a NET< CL |
| 23 | 491.45 | 984.32 | 42 | 47 | 37 | 267 | 1.09 | a |
| 24 | 510.96 | 1023.31 | 1296 | 109 | 68 | 616 | 2.32 | a Wide Pk |

041130D04.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 25 | 558.27 | 1117.86 | 150 | 54 | 39 | 284 | 1.27 | a |
| 26 | 569.48 | 1140.25 | 68 | 55 | 43 | 324 | 1.49 | a |
| 27 | 583.08 | 1167.43 | 79 | 46 | 35 | 243 | 1.22 | a |
| 28 | 609.08 | 1219.40 | 97 | 54 | 41 | 336 | 1.20 | a |
| 29 | 669.23 | 1339.61 | 44 | 35 | 27 | 152 | 1.06 | a |
| 30 | 802.82 | 1606.59 | 107 | 53 | 40 | 257 | 2.21 | a |
| 31 | 897.50 | 1795.81 | 44 | 39 | 30 | 166 | 1.63 | a |
| 32 | 911.36 | 1823.51 | 10 | 96 | 78 | 541 | 5.23 | a NET< CL Wide Pk |
| 33 | 961.82 | 1924.36 | 37 | 28 | 21 | 102 | 0.91 | a |
| 34 | 1162.63 | 2325.69 | 36 | 30 | 22 | 97 | 1.77 | a |
| 35 | 1460.28 | 2920.54 | 193 | 41 | 25 | 105 | 2.47 | a |

041130D04.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0418003-34 Weekly Background

Detector # 4 Background Q.C. Analysis for 06/25/2004 18:04:45

| # | Parameter | Value | n Sigma Test | Bounds Test | T- Test |
|----|--------------------|--------|-----------------|----------------|------------|
| 10 | 50-> 150 keV Bkg | 22.636 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 18.612 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 27.580 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 28.476 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 15.920 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 2.757 | Pass | Pass | N.A. |

Q.C. Results Saved.

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0418003-37 Weekly Background

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:04:48 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time | 6.08E+000 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60139 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 040991D07.SPC |

Detector #: 7 (Detector 7)

Energy(keV) = -2.10 + 0.501*Ch + 6.63E-08*Ch^2 + 3.23E-11*Ch^3 06/25/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.48 | 97.03 | 510 | 81 | 56 | 623 | 0.77 | a |
| 2 | 53.41 | 110.88 | 57 | 59 | 47 | 493 | 0.61 | a |
| 3 | 63.26 | 130.55 | 396 | 82 | 59 | 700 | 0.77 | a |
| 4 | 66.39 | 136.79 | 161 | 76 | 59 | 700 | 0.89 | b |
| 5 | 70.00 | 144.01 | 61 | 63 | 50 | 560 | 0.66 | c |
| 6 | 74.92 | 153.85 | 108 | 64 | 50 | 549 | 0.64 | a |
| 7 | 77.19 | 158.37 | 89 | 63 | 50 | 549 | 0.60 | b |
| 8 | 84.57 | 173.12 | 89 | 79 | 63 | 744 | 0.92 | a |
| 9 | 92.62 | 189.20 | 531 | 79 | 53 | 566 | 0.86 | a |
| 10 | 112.64 | 229.18 | 35 | 54 | 43 | 419 | 0.70 | a NET< CL |
| 11 | 128.95 | 261.76 | 31 | 43 | 35 | 295 | 0.46 | a NET< CL |
| 12 | 139.68 | 283.17 | 138 | 87 | 69 | 744 | 1.27 | a |
| 13 | 144.07 | 291.95 | 119 | 94 | 75 | 837 | 1.50 | b |
| 14 | 185.64 | 374.97 | 261 | 67 | 48 | 463 | 0.76 | a |
| 15 | 198.36 | 400.38 | 125 | 67 | 52 | 494 | 0.95 | a |
| 16 | 238.57 | 480.69 | 238 | 62 | 44 | 389 | 0.89 | a |
| 17 | 253.39 | 510.27 | 24 | 37 | 30 | 218 | 0.52 | a NET< CL |
| 18 | 270.28 | 544.00 | 12 | 37 | 30 | 219 | 0.52 | a NET< CL |
| 19 | 274.95 | 553.33 | 28 | 53 | 43 | 365 | 0.80 | b NET< CL |
| 20 | 338.30 | 679.84 | 48 | 63 | 50 | 433 | 1.14 | a NET< CL |
| 21 | 351.59 | 706.38 | 63 | 43 | 32 | 234 | 0.73 | a |
| 22 | 490.81 | 984.34 | 46 | 46 | 36 | 262 | 1.19 | a |
| 23 | 511.01 | 1024.69 | 1139 | 114 | 76 | 737 | 2.38 | a Wide Pk |
| 24 | 558.48 | 1119.44 | 129 | 48 | 35 | 243 | 1.20 | a |

040991D07.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 569.81 | 1142.06 | 68 | 39 | 29 | 191 | 0.88 | a |
| 26 | 583.19 | 1168.77 | 44 | 38 | 29 | 192 | 0.76 | a |
| 27 | 609.46 | 1221.22 | 78 | 45 | 34 | 245 | 1.04 | a |
| 28 | 693.50 | 1388.97 | 105 | 81 | 64 | 510 | 2.60 | a Wide Pk |
| 29 | 802.85 | 1607.19 | 75 | 34 | 24 | 135 | 0.94 | a |
| 30 | 911.08 | 1823.15 | 64 | 40 | 30 | 169 | 1.61 | a |
| 31 | 962.01 | 1924.76 | 48 | 32 | 24 | 115 | 1.31 | a |
| 32 | 968.65 | 1938.00 | 38 | 36 | 28 | 144 | 1.59 | b |
| 33 | 1460.57 | 2918.81 | 125 | 34 | 21 | 83 | 2.03 | a |

040991D07.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0418003-37 Weekly Background

Detector # 7 Background Q.C. Analysis for 06/25/2004 18:04:48

| # | Parameter | Value | n Sigma Test | Bounds Test | T- Test |
|----|--------------------|--------|-----------------|----------------|------------|
| 10 | 50-> 150 keV Bkg | 23.809 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 18.008 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 27.136 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 27.623 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 15.797 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 3.279 | Pass | Pass | N.A. |

Q.C. Results Saved.

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0418003-38 Weekly Background

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:04:51 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time | 6.08E+000 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60139 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041057D08.SPC |

Detector #: 8 (Detector 8)
 Energy(keV) = -0.36 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004
 FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.43 | 93.48 | 621 | 86 | 58 | 673 | 0.86 | a |
| 2 | 53.46 | 107.55 | 73 | 91 | 74 | 930 | 1.07 | a NET< CL |
| 3 | 63.25 | 127.10 | 470 | 78 | 53 | 628 | 0.73 | a |
| 4 | 66.46 | 133.52 | 110 | 68 | 53 | 628 | 0.67 | b |
| 5 | 69.70 | 140.00 | 8 | 41 | 34 | 314 | 0.38 | c NET< CL |
| 6 | 74.91 | 150.39 | 199 | 60 | 44 | 471 | 0.41 | a |
| 7 | 77.13 | 154.83 | 138 | 79 | 62 | 786 | 0.79 | b |
| 8 | 84.51 | 169.58 | 162 | 103 | 82 | 1072 | 1.31 | a |
| 9 | 86.63 | 173.82 | 21 | 39 | 31 | 268 | 0.40 | b NET< CL |
| 10 | 92.60 | 185.76 | 802 | 97 | 65 | 770 | 0.94 | a |
| 11 | 139.72 | 279.91 | 122 | 75 | 59 | 650 | 0.91 | a |
| 12 | 143.57 | 287.60 | 82 | 48 | 36 | 325 | 0.45 | b |
| 13 | 159.58 | 319.58 | 60 | 46 | 36 | 312 | 0.51 | a |
| 14 | 185.79 | 371.97 | 387 | 81 | 58 | 630 | 0.93 | a |
| 15 | 190.76 | 381.89 | 42 | 45 | 36 | 315 | 0.55 | b |
| 16 | 198.37 | 397.10 | 217 | 85 | 65 | 732 | 1.23 | a |
| 17 | 205.42 | 411.18 | 31 | 45 | 36 | 318 | 0.49 | a NET< CL |
| 18 | 238.67 | 477.63 | 287 | 69 | 50 | 499 | 0.88 | a |
| 19 | 266.18 | 532.60 | 30 | 41 | 32 | 256 | 0.55 | a NET< CL |
| 20 | 270.12 | 540.47 | 22 | 49 | 39 | 341 | 0.62 | b NET< CL |
| 21 | 295.21 | 590.61 | 59 | 56 | 44 | 396 | 0.82 | a |
| 22 | 338.36 | 676.83 | 73 | 60 | 48 | 419 | 1.05 | a |
| 23 | 352.02 | 704.13 | 93 | 51 | 39 | 344 | 0.78 | a |
| 24 | 511.20 | 1022.20 | 1738 | 129 | 81 | 802 | 2.57 | a Wide Pk |

041057D08.SPC Analyzed by

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|------|
| 25 | 558.68 | 1117.08 | 188 | 53 | 37 | 268 | 1.16 | a |
| 26 | 570.10 | 1139.91 | 71 | 44 | 33 | 248 | 0.80 | a |
| 27 | 583.48 | 1166.64 | 89 | 51 | 39 | 298 | 1.07 | a |
| 28 | 597.12 | 1193.89 | 46 | 53 | 42 | 346 | 1.09 | a |
| 29 | 609.56 | 1218.75 | 124 | 52 | 38 | 311 | 1.00 | a |
| 30 | 693.82 | 1387.12 | 47 | 52 | 41 | 345 | 1.24 | a |
| 31 | 803.26 | 1605.81 | 135 | 51 | 37 | 253 | 1.56 | a |
| 32 | 881.01 | 1761.16 | 40 | 36 | 27 | 163 | 1.12 | a |
| 33 | 911.26 | 1821.61 | 60 | 33 | 24 | 130 | 0.92 | a |
| 34 | 962.55 | 1924.11 | 39 | 31 | 23 | 126 | 0.92 | a |
| 35 | 1014.17 | 2027.25 | 40 | 38 | 30 | 178 | 1.62 | a |
| 36 | 1064.10 | 2127.03 | 29 | 26 | 20 | 98 | 0.99 | a |
| 37 | 1120.41 | 2239.54 | 43 | 30 | 23 | 118 | 1.11 | a |
| 38 | 1460.37 | 2918.87 | 259 | 42 | 22 | 98 | 1.68 | a |
| 39 | 1763.70 | 3524.98 | 37 | 22 | 15 | 49 | 1.28 | a |

041057D08.SPC Analyzed by

```
*****
SEEKER      B A C K G R O U N D   Q. C.   A N A L Y S I S   Version 2.2.2
*****
```

ID: 0418003-38 Weekly Background

Detector # 8 Background Q.C. Analysis for 06/25/2004 18:04:51

| # | Parameter | Value | n Sigma Test | Bounds Test | T- Test |
|----|--------------------|--------|-----------------|----------------|------------|
| 10 | 50-> 150 keV Bkg | 26.787 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 21.306 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 31.689 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 33.926 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 19.770 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 3.623 | Pass | Pass | N.A. |

Q.C. Results Saved.

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0418003-40 Weekly Background

| | | | |
|---------------------------------|---------------------|----------------------|---------------------|
| Sampling Start: | 06/25/2004 12:00:00 | Counting Start: | 06/25/2004 18:04:55 |
| Sampling Stop: | 06/25/2004 12:00:00 | Decay Time | 6.08E+000 Hrs |
| Buildup Time | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60139 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041038D10.SPC |

Detector #: 10 (Detector 10)

Energy(keV) = -1.25 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.37 | 95.11 | 1016 | 142 | 105 | 2312 | 1.06 | a |
| 2 | 53.35 | 109.06 | 100 | 91 | 73 | 1307 | 0.71 | a |
| 3 | 63.24 | 128.80 | 773 | 147 | 112 | 2468 | 1.08 | a |
| 4 | 66.33 | 134.97 | 649 | 145 | 112 | 2468 | 1.13 | b |
| 5 | 74.78 | 151.86 | 999 | 216 | 170 | 4274 | 2.03 | a |
| 6 | 77.09 | 156.46 | 1150 | 140 | 101 | 2137 | 1.04 | b |
| 7 | 84.19 | 170.65 | 281 | 140 | 112 | 2318 | 1.29 | a HiResid |
| 8 | 87.13 | 176.52 | 461 | 118 | 91 | 1739 | 1.05 | b HiResid |
| 9 | 92.59 | 187.43 | 1818 | 161 | 112 | 2318 | 1.37 | c HiResid |
| 10 | 139.84 | 281.80 | 423 | 119 | 91 | 1765 | 1.02 | a |
| 11 | 164.13 | 330.31 | 80 | 94 | 76 | 1297 | 0.81 | a |
| 12 | 185.96 | 373.91 | 1494 | 159 | 114 | 2260 | 1.50 | a |
| 13 | 198.52 | 399.00 | 803 | 139 | 105 | 2025 | 1.35 | a |
| 14 | 238.87 | 479.58 | 948 | 138 | 101 | 1993 | 1.40 | a |
| 15 | 242.04 | 485.91 | 881 | 128 | 93 | 1771 | 1.23 | b |
| 16 | 270.31 | 542.36 | 99 | 147 | 120 | 2426 | 1.94 | a NET< CL |
| 17 | 295.42 | 592.53 | 1757 | 143 | 96 | 1774 | 1.52 | a |
| 18 | 328.58 | 658.75 | 68 | 138 | 113 | 2132 | 1.94 | a NET< CL |
| 19 | 338.44 | 678.44 | 93 | 93 | 75 | 1228 | 1.13 | a |
| 20 | 352.16 | 705.84 | 3155 | 161 | 95 | 1661 | 1.58 | a HiResid |
| 21 | 439.57 | 880.43 | 77 | 71 | 57 | 787 | 0.96 | a |
| 22 | 511.43 | 1023.94 | 4972 | 207 | 124 | 2204 | 3.18 | a |
| 23 | 537.47 | 1075.94 | 87 | 89 | 71 | 1027 | 1.61 | a |
| 24 | 558.88 | 1118.71 | 565 | 112 | 83 | 1285 | 1.88 | a |

041038D10.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|----------------------|
| 25 | 570.33 | 1141.58 | 278 | 118 | 93 | 1536 | 2.09 | a |
| 26 | 584.03 | 1168.93 | 400 | 106 | 81 | 1259 | 1.75 | a |
| 27 | 601.59 | 1204.00 | 1982 | 301 | 237 | 4681 | 6.76 | a HiResid Wide Pk |
| 28 | 609.84 | 1220.49 | 3518 | 186 | 118 | 2055 | 2.87 | b HiResid |
| 29 | 617.54 | 1235.86 | 482 | 217 | 175 | 3311 | 4.67 | c HiResid |
| 30 | 670.37 | 1341.38 | 115 | 84 | 67 | 904 | 1.57 | a |
| 31 | 695.04 | 1390.66 | 198 | 113 | 90 | 1443 | 2.19 | a |
| 32 | 727.28 | 1455.05 | 98 | 100 | 81 | 1161 | 2.09 | a |
| 33 | 769.31 | 1538.98 | 296 | 140 | 111 | 1617 | 3.60 | a |
| 34 | 803.95 | 1608.16 | 508 | 138 | 108 | 1556 | 3.49 | a |
| 35 | 898.88 | 1797.76 | 126 | 84 | 66 | 817 | 1.96 | a |
| 36 | 912.16 | 1824.28 | 316 | 104 | 80 | 1021 | 2.64 | a |
| 37 | 934.36 | 1868.63 | 133 | 114 | 92 | 1177 | 3.20 | a |
| 38 | 1120.59 | 2240.56 | 761 | 135 | 101 | 1196 | 4.19 | a |
| 39 | 1239.19 | 2477.43 | 259 | 107 | 84 | 919 | 3.63 | a |
| 40 | 1378.08 | 2754.82 | 111 | 61 | 48 | 417 | 2.02 | a |
| 41 | 1461.73 | 2921.90 | 1467 | 119 | 75 | 686 | 3.86 | a |
| 42 | 1730.01 | 3457.71 | 112 | 88 | 70 | 556 | 4.45 | a |
| 43 | 1764.70 | 3526.99 | 721 | 106 | 75 | 541 | 5.50 | a |
| 44 | 1847.36 | 3692.07 | 82 | 69 | 55 | 383 | 3.76 | a |

041038D10.SPC Analyzed by

```
*****
SEEKER      B A C K G R O U N D   Q. C.   A N A L Y S I S   Version 2.2.2
*****
```

ID: 0418003-40 Weekly Background

Detector # 10 Background Q.C. Analysis for 06/25/2004 18:04:55

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|----|--------------------|---------|--------------|-------------|--------|
| 10 | 50-> 150 keV Bkg | 66.376 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 53.406 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 84.983 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 101.169 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 63.447 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 9.391 | Pass | Pass | N.A. |

Q.C. Results Saved.

Gamma Spectrometer Calibration Log

Date: 7/2/04Reviewed By/Date: JP 7/2/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | JP | MC | JP | / | / | | | | | |
| 2. | | / | JP | JP | JP | | | | | |
| 3. | | / | JP | JP | JP | | | | | |
| 4. | | / | △ | JP | JP | | | | | |
| 5. | JP | / | / | / | / | | | | | |
| 6. | JP | / | / | / | / | | | | | |
| 7. | MC | JP | JP | JP | | | | | | |
| 8. | | / | JP | JP | JP | | | | | |
| 9. | JP | / | / | / | / | | | | | |
| 10. | MC | JP | JP | JP | | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

* DETECTOR ABLE TO BE BIASED;
 DAILY Q.C. LIMITS RESET TO
 INTERIM VALUES; DETECTOR
 WILL BE RE-CALIBRATED AND
 IS IN SERVICE. MC 7/2/04

△ Detector 4 passed on bounds test for Weekly
 background check. However, it peak shifted (K-40 at 1466 keV
 so it will be recounted on 7/3/04. JP 7/3/04 rather than 1460 keV)

278943 A

Form 754r9.frm (9/19/2001)

000523

Gamma Spectrometer Calibration Log

Date: 7/3/04Reviewed By/Date: JP 7/3/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|--------|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | JP | | | / | / | | | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | | JP | X2 | JP | JP | | | | | |
| 5. | JP | | | / | / | | | | | |
| 6. | JP | | | / | / | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | / | GO FWHM | JP | | | |
| 9. | JP | | | / | / | | | | | |
| 10. | JP | JP | 7/3/04 | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278952 A

Form 754r9.frm (9/19/2001)

000530

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0419002-10 Weekly Bkg.

| | | | |
|---------------------------------|---------------------|---------------------|---------------------|
| Sampling Start: | 07/02/2004 12:00:00 | Counting Start: | 07/02/2004 17:53:17 |
| Sampling Stop: | 07/02/2004 12:00:00 | Decay Time. | 5.89E+000 Hrs |
| Buildup Time. | 0.00E+000 Hrs | Live Time | 60000 Sec |
| Sample Size | 1.00E+000 L | Real Time | 60135 Sec |
| Collection Efficiency | 1.0000 | Spc. File | 041129D10.SPC |

Detector #: 10 (Detector 10)

Energy(keV) = -1.11 + 0.501*Ch +5.51E-08*Ch^2 + 5.66E-11*Ch^3 07/02/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

=====
PEAK SEARCH RESULTS
=====

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.46 | 95.00 | 1030 | 167 | 127 | 2989 | 1.29 | a |
| 2 | 53.66 | 109.37 | 235 | 135 | 109 | 2321 | 1.13 | a |
| 3 | 63.40 | 128.83 | 919 | 175 | 135 | 3174 | 1.42 | a |
| 4 | 66.25 | 134.52 | 709 | 146 | 112 | 2468 | 1.21 | b |
| 5 | 74.80 | 151.59 | 928 | 176 | 136 | 3200 | 1.45 | a |
| 6 | 77.07 | 156.14 | 1365 | 168 | 124 | 2844 | 1.31 | b |
| 7 | 87.15 | 176.26 | 440 | 145 | 114 | 2419 | 1.24 | a |
| 8 | 92.66 | 187.26 | 1848 | 186 | 136 | 3024 | 1.71 | b |
| 9 | 128.93 | 259.69 | 113 | 107 | 87 | 1584 | 1.04 | a |
| 10 | 139.74 | 281.29 | 552 | 128 | 98 | 1881 | 1.15 | a |
| 11 | 143.58 | 288.96 | 204 | 122 | 98 | 1881 | 1.21 | b |
| 12 | 185.94 | 373.54 | 1379 | 158 | 114 | 2278 | 1.40 | a |
| 13 | 198.40 | 398.43 | 763 | 129 | 95 | 1796 | 1.16 | a |
| 14 | 238.83 | 479.17 | 1013 | 138 | 101 | 1991 | 1.53 | a |
| 15 | 242.02 | 485.53 | 874 | 136 | 101 | 1991 | 1.40 | b |
| 16 | 259.07 | 519.59 | 132 | 128 | 103 | 1973 | 1.70 | a |
| 17 | 295.30 | 591.94 | 1852 | 144 | 95 | 1754 | 1.50 | a |
| 18 | 338.58 | 678.37 | 217 | 112 | 89 | 1524 | 1.53 | a |
| 19 | 352.08 | 705.33 | 3429 | 174 | 105 | 1867 | 1.90 | a |
| 20 | 511.15 | 1022.96 | 4819 | 206 | 125 | 2242 | 3.12 | a |
| 21 | 558.61 | 1117.73 | 546 | 106 | 78 | 1179 | 1.87 | a |
| 22 | 569.64 | 1139.74 | 198 | 143 | 115 | 2036 | 2.80 | a |
| 23 | 583.94 | 1168.29 | 424 | 127 | 99 | 1598 | 2.41 | a |
| 24 | 597.68 | 1195.73 | 297 | 125 | 99 | 1605 | 2.41 | a HiResid |

041129D10.SPC Analyzed by

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| ----- | | | | | | | | |
| 25 | 602.74 | 1205.84 | 1821 | 291 | 229 | 4387 | 6.78 | b HiResid |
| 26 | 609.54 | 1219.40 | 3275 | 180 | 114 | 1926 | 2.87 | c HiResid |
| 27 | 616.69 | 1233.68 | 625 | 265 | 214 | 4066 | 6.18 | d HiResid |
| 28 | 693.76 | 1387.55 | 411 | 163 | 130 | 2191 | 3.58 | a |
| 29 | 697.20 | 1394.41 | 145 | 96 | 76 | 1167 | 1.62 | b |
| 30 | 769.02 | 1537.78 | 278 | 117 | 92 | 1254 | 3.03 | a |
| 31 | 803.70 | 1606.98 | 450 | 133 | 104 | 1451 | 3.50 | a |
| 32 | 838.01 | 1675.46 | 268 | 158 | 127 | 1991 | 3.99 | a |
| 33 | 898.97 | 1797.12 | 311 | 128 | 101 | 1327 | 3.67 | a |
| 34 | 911.62 | 1822.37 | 292 | 101 | 78 | 965 | 2.63 | b |
| 35 | 934.03 | 1867.08 | 90 | 80 | 64 | 717 | 2.16 | a |
| 36 | 963.66 | 1926.20 | 294 | 130 | 103 | 1306 | 3.94 | a |
| 37 | 969.48 | 1937.81 | 169 | 81 | 63 | 707 | 2.08 | b |
| 38 | 1120.91 | 2239.90 | 532 | 101 | 74 | 834 | 2.73 | a |
| 39 | 1238.80 | 2475.01 | 142 | 84 | 66 | 699 | 2.69 | a |
| 40 | 1378.26 | 2753.01 | 172 | 101 | 81 | 779 | 4.09 | a |
| 41 | 1461.72 | 2919.33 | 1153 | 110 | 71 | 640 | 3.76 | a |
| 42 | 1730.16 | 3453.92 | 90 | 93 | 75 | 611 | 4.67 | a |
| 43 | 1765.85 | 3524.96 | 620 | 104 | 75 | 563 | 5.18 | a |

041129D10.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0419002-10 Weekly Bkg.

Detector # 10 Background Q.C. Analysis for 07/02/2004 17:53:17

| # | Parameter | Value | n Sigma Test | Bounds Test | T- Test |
|----|--------------------|--------|-----------------|----------------|------------|
| 10 | 50-> 150 keV Bkg | 66.426 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 53.319 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 84.017 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 99.181 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 61.782 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 9.214 | Pass | Pass | N.A. |

Q.C. Results Saved.

Gamma Spectrometer Calibration Log

Date: 7-16-04Reviewed By/Date: JP 7/16/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|----------|----------------|------------|----|--------------|---------------|-------------------------------|---------------------|---------------------|----------------------------|----------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | MC | JP | JP | JP | | | | | |
| 2. | | / | JP | JP | JP | | | | | |
| 3. | | / | JP | JP | JP | | | | | |
| 4. | | / | JP | JP | | 60 Fm/14, EM 1332 Centroid | JP | | | |
| 5. | MC | / | / | / | / | | | | | |
| 6. | / | / | / | / | / | | | | | |
| 7. | MC* | / | JP | JP | | | | | | |
| 8. | / | JP | JP | | 1332 Centroid | JP | | Gain Adjusted | | |
| 9. | MC MC* | / | / | / | / | | | | | |
| 10. | / | JP | JP | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

* DETECTOR WILL BE BROUGHT INTO SERVICE AND RE-CALIBRATED AFTER SUCCESSFUL COMPLETION OF BACKGROUND. MC 7/16/04

** BACKGROUND FAILURE - (1000-2,000 keV)
LOW. BOUNDS

DETECTOR BACKGROUND RECOUNTED
ON 7/17/04. MC 7/17/04

278939

A

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4Paragon Analytics, Div. of DataChem Lab
GammaScan*****
Weekly Background Check

Sample ID: 0419002-28 Weekly Bkg.

Sampling Start: 07/16/2004 12:00:00 | Counting Start: 07/16/2004 16:47:17
 Sampling Stop: 07/16/2004 12:00:00 | Decay Time. 4.79E+000 Hrs
 Buildup Time. 0.00E+000 Hrs | Live Time 60000 Sec
 Sample Size 1.00E+000 L | Real Time 60218 Sec
 Collection Efficiency 1.0000 | Spc. File 041234D08.SPC

Detector #: 8 (Detector 8)
 Energy (keV) = -0.28 + 0.500*Ch +2.23E-07*Ch^2 + 1.06E-10*Ch^3 07/16/2004
 FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
 Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 1 | 46.46 | 93.42 | 505 | 84 | 58 | 689 | 0.85 | a |
| 2 | 49.76 | 100.00 | 17 | 39 | 32 | 276 | 0.36 | b NET< CL |
| 3 | 53.15 | 106.79 | 40 | 72 | 58 | 689 | 0.79 | c NET< CL |
| 4 | 63.28 | 127.03 | 661 | 85 | 56 | 631 | 0.88 | a Wide Pk |
| 5 | 66.25 | 132.96 | 324 | 104 | 80 | 1009 | 1.34 | b |
| 6 | 69.80 | 140.07 | 205 | 101 | 80 | 1009 | 1.37 | c |
| 7 | 72.52 | 145.50 | 206 | 129 | 103 | 1388 | 1.80 | d |
| 8 | 75.00 | 150.45 | 288 | 85 | 64 | 757 | 0.98 | e |
| 9 | 77.04 | 154.53 | 210 | 74 | 56 | 631 | 0.79 | f |
| 10 | 84.58 | 169.61 | 143 | 84 | 66 | 810 | 1.05 | a |
| 11 | 87.55 | 175.55 | 61 | 41 | 31 | 270 | 0.40 | b |
| 12 | 92.65 | 185.74 | 754 | 88 | 57 | 652 | 0.82 | a |
| 13 | 102.72 | 205.88 | 35 | 64 | 51 | 534 | 0.78 | a NET< CL |
| 14 | 106.14 | 212.70 | 42 | 55 | 44 | 427 | 0.67 | b NET< CL |
| 15 | 112.94 | 226.30 | 39 | 47 | 37 | 335 | 0.42 | a |
| 16 | 139.75 | 279.89 | 146 | 68 | 52 | 549 | 0.78 | a |
| 17 | 143.88 | 288.14 | 65 | 56 | 45 | 439 | 0.66 | b |
| 18 | 185.81 | 371.97 | 338 | 78 | 57 | 596 | 0.99 | a |
| 19 | 198.33 | 396.99 | 186 | 67 | 50 | 507 | 0.83 | a |
| 20 | 238.71 | 477.72 | 293 | 75 | 55 | 564 | 0.92 | a |
| 21 | 295.21 | 590.68 | 90 | 71 | 57 | 547 | 1.16 | a |
| 22 | 338.30 | 676.84 | 74 | 53 | 42 | 350 | 0.79 | a |
| 23 | 352.04 | 704.30 | 205 | 59 | 43 | 383 | 1.05 | a |
| 24 | 511.08 | 1022.26 | 1587 | 126 | 80 | 784 | 2.55 | a Wide Pk |

PEAK SEARCH RESULTS

| PK. # | ENERGY (keV) | ADDRESS CHANNEL | NET/MDA COUNTS | UN- CERTAINTY | C.L. COUNTS | BKG COUNTS | FWHM (keV) | FLAG |
|----------|-----------------|--------------------|-------------------|------------------|----------------|---------------|---------------|-----------|
| 25 | 558.61 | 1117.27 | 171 | 49 | 34 | 246 | 0.97 | a |
| 26 | 583.46 | 1166.94 | 77 | 49 | 38 | 284 | 1.07 | a |
| 27 | 597.02 | 1194.06 | 51 | 77 | 62 | 570 | 1.91 | a NET< CL |
| 28 | 609.53 | 1219.06 | 109 | 47 | 35 | 276 | 0.89 | a |
| 29 | 669.66 | 1339.25 | 40 | 49 | 39 | 293 | 1.46 | a |
| 30 | 803.42 | 1606.58 | 130 | 53 | 39 | 267 | 1.84 | a |
| 31 | 911.89 | 1823.29 | 67 | 47 | 36 | 227 | 1.84 | a |
| 32 | 1461.20 | 2919.49 | 187 | 38 | 22 | 98 | 1.66 | a |
| 33 | 1765.77 | 3525.93 | 39 | 25 | 18 | 58 | 1.94 | a |

041234D08.SPC Analyzed by

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

ID: 0419002-28 Weekly Bkg.

Detector # 8 Background Q.C. Analysis for 07/16/2004 16:47:17

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|----|--------------------|--------|--------------|-------------|--------|
| 10 | 50-> 150 keV Bkg | 26.789 | Pass | Pass | N.A. |
| 11 | 150-> 250 keV Bkg | 20.527 | Pass | Pass | N.A. |
| 12 | 250-> 500 keV Bkg | 31.482 | Pass | Pass | N.A. |
| 13 | 500->1000 keV Bkg | 32.926 | Pass | Pass | N.A. |
| 14 | 1000->2000 keV Bkg | 18.981 | Pass | Pass | N.A. |
| 15 | 40-> 50 keV Bkg | 3.617 | Pass | Pass | N.A. |

Q.C. Results Saved.

Gamma Spectroscopy

Quality Control Data

Daily Instrument Performance
Checks



ATID 0126
Analytics, Inc.
1380 Seaboard Industrial Boulevard
Atlanta, Georgia 30318
404 352-8677

Rec'd 12-29-94

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

49500-307

50 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 1994 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|------------------|-----------|-----------------------|---------------------|
| Am-241 | 59.5 | 432 | Y 1759 | 5.0 |
| Cd-109 | 88 | 462.6 | d 2622 | 4.5 |
| Co-57 | 122 | 271.79 | d 1472 | 4.2 |
| Ce-139 | 166 | 137.64 | d 2037 | 4.6 |
| Hg-203 | 279 | 46.595 | d 3978 | 4.5 |
| Sn-113 | 392 | 115.09 | d 2862 | 4.7 |
| Cs-137 | 662 | 30.0 | y 1735 | 4.4 |
| Y-88 | 898 | 106.63 | d 7290 | 4.3 |
| Co-60 | 1173 | 5.2714 | y 3347 | 4.8 |
| Co-60 | 1332 | 5.2714 | y 3355 | 4.3 |
| Y-88 | 1836 | 106.63 | d 7630 | |

50.8520 grams solution 4M HCl.
P O NUMBER 45864, Item 1

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: D. M. Monty 12-23-94

This standard will expire one year after the calibration date.

000533

ATI I.D. 0126



Analytics, Inc.
1380 Seaboard Industrial Boulevard
Atlanta, Georgia 30318
404 352-8677

ANALYSIS OF UNCERTAINTY

BATCH 78 MIXED GAMMA STANDARDS WITH Am-241
CALIBRATION DATE: October 1, 1994 12:00 EST

| GAMMA RAY ENERGY (keV) | RANDOM ERROR % (99 % CL) | SYSTEMATIC ERROR % | TOTAL % |
|------------------------|---------------------------|--------------------|---------|
| 59.5 | 2.0 | 3.0 | 5.0 |
| 88 | 1.5 | 3.0 | 4.5 |
| 122 | 1.6 | 2.6 | 4.2 |
| 166 | 2.1 | 2.5 | 4.6 |
| 279 | 1.5 | 3.0 | 4.5 |
| 392 | 1.9 | 2.8 | 4.7 |
| 662 | 1.9 | 2.8 | 4.7 |
| 898 | 1.4 | 3.0 | 4.4 |
| 1173 | 1.5 | 2.8 | 4.3 |
| 1332 | 2.0 | 2.8 | 4.8 |
| 1836 | 1.2 | 3.1 | 4.3 |

The systematic error includes the error in calibration standards, weighing error, and estimated counting corrections. All uncertainties are stated at the 99% confidence level.

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (kev/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.



U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

*Analytics, Incorporated
Atlanta, Georgia*

is a participant for the period January 1, 1994, through December 31, 1994, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the U.S. Council for Energy Awareness. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

J.M. Robin Hutchinson, Acting Group Leader
Radioactivity Group
Physics Laboratory

(over)

000541

Gamma Spectrometer Calibration Log

Date: 6/26/04Reviewed By/Date: JP 6/26/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | JP | JP | | | | | |
| 2. | | | | | JP | | | | | |
| 3. | | | | | JP | | | | | |
| 4. | | | | ↓ | JP | | | | | |
| 5. | JP | | | /\ | /\ | | | | | |
| 6. | JP | | | /\ | /\ | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | ↓ | JP | | | | | |
| 9. | JP | | | /\ | /\ | | | | | |
| 10. | | | | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278932 A

Form 754r9.frm (9/19/2001)

000543

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 1 Detector Q.C. Analysis for 06/26/2004 10:52:12
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.141 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.645 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 4.022E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.649 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 2.408 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.704E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.242 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 3.264 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.510E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DDAILY CHECK

Detector # 2 Detector Q.C. Analysis for 06/26/2004 10:52:24
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.457 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.652E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.325E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.530 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.415 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.089E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.724 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.117 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.038E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 06/26/2004 10:56:23
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.652 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.192E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.746E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.384 | <FAIL>* | Pass | N.A. |
| 5 | 662 keV FWHM | 1.675 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.803E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.913 | <FAIL>* | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.510 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.839E-03 | Pass | Pass | N.A. |

*Paragon Analytics does not control on the n-sigma test. JP 6/26/04

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 8 Detector Q.C. Analysis for 06/26/2004 11:03:00
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 119.631 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.544E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.094E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.412 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.377 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.811E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2662.938 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.970 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.332E-03 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 6-27-04Reviewed By/Date: MC 6-27-04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | MC | MC | | | | | |
| 2. | | | | ↓ | ↓ | | | | | |
| 3. | | | | ↓ | — | GO FWD UNI ↓ EFF. | MC | | | |
| 4. | | | | ↓ | — | 1332 CENT | MC | | GAIN ADJUST. | |
| 5. | MC | | | — | — | | | | | |
| 6. | ↓ | | | — | — | | | | | |
| 7. | | | | MC | MC | | | | | |
| 8. | | | | ↓ | ↓ | | | | | |
| 9. | MC | | | — | — | | | | | |
| 10. | | | | MC | MC | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

478934 A

Form 754r9.frm (9/19/2001)

000543

041508D01.SPC Analyzed by MC

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 1 Detector Q.C. Analysis for 06/27/2004 16:30:04
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.114 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.662 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 3.943E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.749 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 2.411 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.578E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.276 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 3.214 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.492E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 2 Detector Q.C. Analysis for 06/27/2004 16:30:14
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.438 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.025E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.319E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.556 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.444 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.056E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.762 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.018 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.019E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 06/27/2004 16:30:26
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.524 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.178 | <FAIL> | <FAIL> | N.A. |
| 3 | 60 keV Efficiency | 1.956E-02 | Pass | <FAIL> | N.A. |
| 4 | 662 keV Centroid | 1324.352 | <FAIL> | Pass | N.A. |
| 5 | 662 keV FWHM | 1.822 | <FAIL> | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.873E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.849 | <FAIL> | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.530 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.997E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 06/27/2004 16:59:43
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.622 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 9.157E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.849E-02 | Pass | <FAIL> | N.A. |
| 4 | 662 keV Centroid | 1324.365 | <FAIL> | Pass | N.A. |
| 5 | 662 keV FWHM | 1.673 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.749E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.851 | <FAIL> | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.522 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 8.790E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 06/27/2004 17:25:18
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.681 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 9.063E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.847E-02 | Pass | <FAIL> | N.A. |
| 4 | 662 keV Centroid | 1324.345 | <FAIL> | Pass | N.A. |
| 5 | 662 keV FWHM | 1.698 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.810E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.759 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.652 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.014E-03 | Pass | Pass | N.A. |

041081D03.SPC Analyzed by MC

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 06/27/2004 18:17:15
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|---------------------|-------------|--------|
| 1 | 60 keV Centroid | 120.605 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.413E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.733E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.335 | <FAIL> A | Pass | N.A. |
| 5 | 662 keV FWHM | 1.703 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.797E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.721 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.569 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 8.697E-03 | Pass | Pass | N.A. |

* P.A. DOES NOT CONTROL ON
N-SIGMA TEST MC 6/27/04

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 06/27/2004 16:30:38
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.984 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.893E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.929E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1322.608 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.560 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.965E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2660.937 | Pass | <FAIL> | N.A. |
| 8 | 1332 keV FWHM | 2.413 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.026E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 06/27/2004 17:09:21
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.046 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.730E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.861E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.092 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.543 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.979E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2662.285 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.300 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.071E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 7 Detector Q.C. Analysis for 06/27/2004 16:30:49
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 122.995 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.283E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 6.832E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1325.365 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.429 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.572E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.646 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.015 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 7.916E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 8 Detector Q.C. Analysis for 06/27/2004 16:30:59
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 119.565 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.602E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.188E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.443 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.329 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.845E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.069 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.911 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.062E-03 | Pass | Pass | N.A. |

041046D10.SPC Analyzed by M

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 06/27/2004 16:31:09
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.191 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.257 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.293E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.798 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 2.753 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.540E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.657 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.613 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.500E-02 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 6/28/04Reviewed By/Date: JP 6/28/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | JP | JP | | | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | | | | JP | | 1332 Central | JP | | Gain Adjusted | |
| 5. | JP | | | | | | | | | |
| 6. | JP | | | | | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | JP | | | | | |
| 9. | | | | | | | | | | |
| 10. | | | | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278936

A

Form 754r9.frm (9/19/2001)

000560

 SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 2 Detector Q.C. Analysis for 06/28/2004 06:54:45
 Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.472 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.886E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.312E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.572 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.420 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.999E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.908 | <FAIL> | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.176 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.046E-02 | Pass | Pass | N.A. |

*Paragon does not control on the n-sigma test. JP 6/28/04

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 06/28/2004 06:55:13
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.941 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.023E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.926E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1322.025 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.584 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.062E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2659.928 | Pass | <FAIL> | N.A. |
| 8 | 1332 keV FWHM | 2.364 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.014E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 06/28/2004 07:22:48
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.114 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.570E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.896E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.823 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.586 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.017E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.641 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.395 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.992E-03 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 6/28/04Reviewed By/Date: JP 6/28/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|----------|----------------|------------|----|--------------|----|---------------------|---------------------|---------------------|----------------------------|----------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | JP | JP | | | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | | | | JP | | 1332 Central JP* | | | Gain Adjusted | |
| 5. | JP | | | | | | | | | |
| 6. | JP | | | | | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | JP | | | | | |
| 9. | | | | | | | | | | |
| 10. | | | | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

MC 6/28/04

* DURING AFTER 1ST SAMPLE COUNT,
 THE BACKGROUND SUBTRACTION ROUTINE
 WAS FOUND TO BE INCOMPLETE DUE TO
 THE Z-keV PEAK SEARCH TOLERANCE
 FOR THE K-40 PEAK (1460 keV). A GAIN
 ADJUSTMENT WAS DONE AND A DAILY
 CHECK RUN WAS DONE TO ENSURE DETECTOR
 WAS IN CONTROL. DETECTOR REMAINS
 ONLINE AND IS IN SERVICE. MC 6/28/04

278936

A

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 06/28/2004 13:57:46

Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.112 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.543E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.940E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.849 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.653 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.082E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.447 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.486 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.798E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 7 Detector Q.C. Analysis for 06/28/2004 06:55:35
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 122.997 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.316E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 6.884E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1325.377 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.418 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.557E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.445 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.025 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 7.704E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 06/28/2004 06:56:03
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.189 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.297 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.207E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.895 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 2.918 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.508E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.515 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.615 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.424E-02 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 6/29/04Reviewed By/Date: JP 6/29/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|----------|----------------|------------|----|--------------|----|---------------------|---------------------|---------------------|----------------------------|----------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | MC | | | JP | * | | | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | | | | JP | JP | | | | | |
| 5. | | | | | | | | | | |
| 6. | | | | | | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | JD | | | | | |
| 9. | | | | | | | | | | |
| 10. | | | | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

*NO SIGNAL FROM DETECTOR MC 6-29-04

278939 A

Form 754r9.frm (9/19/2001)

000568

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 2 Detector Q.C. Analysis for 06/29/2004 06:00:38
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.441 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.225E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.302E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.520 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.413 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.066E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.739 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.079 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.031E-02 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 7/1/04Reviewed By/Date: JP 7/1/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | JP | | | / | / | | | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | | | | JP | / | 1332 centroid | JP | | Gain Adjustment | |
| 5. | JP | | | / | / | | | | | |
| 6. | JP | | | / | / | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | JP | | | | | |
| 9. | JP | | | / | / | | | | | |
| 10. | | | | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278946 A

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 2 Detector Q.C. Analysis for 07/01/2004 07:15:42
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.443 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.377E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.291E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.284 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.429 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.010E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.303 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.074 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.078E-02 | Pass | Pass | N.A. |

 SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 07/01/2004 07:15:57
 Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.643 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.339E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.674E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.359 | <FAIL>* | Pass | N.A. |
| 5 | 662 keV FWHM | 1.766 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.837E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2664.998 | <FAIL>* | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.456 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 8.644E-03 | Pass | Pass | N.A. |

* Paragon Analytics does not control on the n sigma test. JP & 7/1/04
 SP 7/1/04

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 07/01/2004 07:20:01
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma | Bounds | T- |
|---|---------------------|-----------|---------|--------|------|
| | | | Test | Test | Test |
| 1 | 60 keV Centroid | 120.986 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.926E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.898E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1322.430 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.550 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.996E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2660.741 | Pass | <FAIL> | N.A. |
| 8 | 1332 keV FWHM | 2.462 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.006E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 07/01/2004 08:02:07
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.048 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.734E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.872E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.132 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.588 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.001E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2661.983 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.515 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.025E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 7 Detector Q.C. Analysis for 07/01/2004 07:16:10

Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 123.026 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.362E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 6.805E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1325.374 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.409 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.503E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.667 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.850 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 7.209E-03 | Pass | Pass | N.A. |

041081D10.SPC Analyzed by JP

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 07/01/2004 07:16:41
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|---------------------|-------------|--------|
| 1 | 60 keV Centroid | 121.102 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.299 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.311E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.466 | <FAIL> [*] | Pass | N.A. |
| 5 | 662 keV FWHM | 2.826 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.573E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2661.868 | <FAIL> [*] | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.922 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.505E-02 | Pass | Pass | N.A. |

^{*}Paragon Analytics does not control on the n sigma test. JP 7/1/04

Gamma Spectrometer Calibration Log

Date: 7/2/04Reviewed By/Date: JP 7/2/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | JP | | | / | / | | | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | | | | JP | JP | | | | | |
| 5. | JP | | | / | / | | | | | |
| 6. | JP | | | / | / | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | JP | | | | | |
| 9. | JP | | | / | / | | | | | |
| 10. | | | | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278948 A

041138D02.SPC Analyzed by JP

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 2 Detector Q.C. Analysis for 07/02/2004 07:55:05
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.406 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.897E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.261E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.199 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.455 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 2.042E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.041 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.094 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.025E-02 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 3 Detector Q.C. Analysis for 07/02/2004 09:45:39
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 120.705 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.957E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.790E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1324.501 | <FAIL> | Pass | N.A. |
| 5 | 662 keV FWHM | 1.709 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.758E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2665.108 | <FAIL> | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.605 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 8.941E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 4 Detector Q.C. Analysis for 07/02/2004 07:51:21
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.055 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 6.611E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 1.981E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.147 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.568 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.977E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2661.981 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.487 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.788E-03 | Pass | Pass | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 7 Detector Q.C. Analysis for 07/02/2004 08:30:55

Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 123.013 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.327E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 6.856E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1325.339 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.405 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.511E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.398 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.935 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 7.763E-03 | Pass | Pass | N.A. |

041087D10.SPC Analyzed by JP

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 07/02/2004 05:50:42
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.069 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.259 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.227E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.422 | <FAIL>* | Pass | N.A. |
| 5 | 662 keV FWHM | 2.865 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.630E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2661.772 | <FAIL>* | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.773 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.561E-02 | Pass | Pass | N.A. |

* Paragon Analytics does not control on The n-sigma test. JP 7/2/04

Gamma Spectrometer Calibration Log

Date: 7/3/04Reviewed By/Date: JP 7/3/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|--------|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | JP | | | / | / | | . | | | |
| 2. | | | | JP | JP | | | | | |
| 3. | | | | JP | JP | | | | | |
| 4. | JP | | | JP | JP | | | | | |
| 5. | JP | | | / | | | | | | |
| 6. | JP | | | / | | | | | | |
| 7. | | | | JP | JP | | | | | |
| 8. | | | | JP | / | GO FNUIM | JP | | | |
| 9. | JP | | | / | | | | | | |
| 10. | JP | JP | 7/3/04 | JP | JP | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

276952 A

Form 754r9.frm (9/19/2001)

000583

041130D10.SPC Analyzed by JP

 SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 07/03/2004 11:54:12
 Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|---------------------|-------------|--------|
| 1 | 60 keV Centroid | 121.165 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.337 | <FAIL> [*] | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.203E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.532 | <FAIL> [*] | Pass | N.A. |
| 5 | 662 keV FWHM | 2.806 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.361E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2662.257 | <FAIL> [*] | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.983 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.490E-02 | Pass | Pass | N.A. |

*Paragon Analytics does not control on the n-sigma test JP 7/3/04

Gamma Spectrometer Calibration Log

Date: 7.4.04Reviewed By/Date: MC 7-4-04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | X2 | | | | | | | | | |
| 2. | | | | X7 | X2 | | | | | |
| 3. | | | | | X2 | | | | | |
| 4. | | | | | | 1332 Cent | MC | | Gain Adj. | |
| 5. | X4 | | | | | | | | | |
| 6. | X2 | | | | | | | | | |
| 7. | | | | X2 | X2 | | | | | |
| 8. | | | | L | | 60 FmU/m | MC | | | |
| 9. | X2 | | | | | | | | | |
| 10. | | | | X2 | X2 | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278953 A

Form 754r9.frm (9/19/2000)

- 000585

041133D10.SPC Analyzed by MC

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 07/04/2004 12:43:38
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 121.101 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.319 | <FAIL>* | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.241E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.547 | <FAIL>* | Pass | N.A. |
| 5 | 662 keV FWHM | 2.979 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.579E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2661.841 | <FAIL>* | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.874 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.403E-02 | Pass | Pass | N.A. |

P.A. DOES NOT CONTROL ON N-SIGMA TEST. MC 7/5/04

Gamma Spectrometer Calibration Log

Date: 7-5-04Reviewed By/Date: MC 7-5-04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | X2 | | | | | | | | | |
| 2. | | | | X2 | | 60 FWHM, ETP | X2 | | | |
| 3. | | | | | X2 | | | | | |
| 4. | | | | | X2 | | | | | |
| 5. | X2 | | | | | | | | | |
| 6. | X2 | | | | | | | | | |
| 7. | | | | X2 | X2 | | | | | |
| 8. | | | | | X2 | 662 ETP | X2 | | | |
| 9. | X2 | | | | | | | | | |
| 10. | | | | X2 | X2 | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278954 A

Form 754r9.frm (9/19/2000)

000587

041135D10.SPC Analyzed by MC

 SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 10 Detector Q.C. Analysis for 07/05/2004 11:48:25
 Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|---------------------|-------------|--------|
| 1 | 60 keV Centroid | 121.077 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 1.278 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.321E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.425 | <FAIL> x | Pass | N.A. |
| 5 | 662 keV FWHM | 2.864 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 4.456E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2662.031 | <FAIL> x | Pass | N.A. |
| 8 | 1332 keV FWHM | 4.761 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 2.410E-02 | Pass | Pass | N.A. |

P.A. DOES NOT CONTROL ON
 N-SIGMA TEST. MC 7/5/04

Gamma Spectrometer Calibration Log

Date: 7/20/04Reviewed By/Date: M07-20-04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|-----|--------------|----------|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | WB | WB | | | | | |
| 2. | | | | MC | MC | | | | | |
| 3. | | | | | MC | | | | | |
| 4. | | | | ↓ | ↓ | | | | | |
| 5. | | MC | | MC | MC | | | | GAIN ADJUST. | |
| 6. | MC | | | / | / | | | | | |
| 7. | | | | MC | MC | | | | | |
| 8. | | | LWB | / | 1332 EFF | MC | | | | |
| 9. | | | | ↓ | WB | | | | | |
| 10. | | | | MC | MC | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

278999 A

Form 754r9.frm (9/19/2001)

00058

041247D08.SPC Analyzed by MC

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 8 Detector Q.C. Analysis for 07/20/2004 06:54:33
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma | Bounds Test | T-Test |
|---|---------------------|-----------|---------|-------------|--------|
| 1 | 60 keV Centroid | 119.546 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 8.039E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.205E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.368 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.437 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.805E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.216 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.950 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 1.017E-02 | Pass | <FAIL> | N.A. |

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 8 Detector Q.C. Analysis for 07/20/2004 07:17:23
Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 119.553 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.737E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.095E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.411 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.442 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.833E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2663.091 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.967 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.758E-03 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 7-21-04Reviewed By/Date: MC 7-21-04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|-----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | LB | LB | | | | | |
| 2. | | | | LB | LB | | | | | |
| 3. | | | | LB | LB | | | | | |
| 4. | | | | LB | LB | | | | | |
| 5. | | | | LB | X | 60 EFF, 1352 EFF | MC | | | |
| 6. | MC | | | / | / | | | | | |
| 7. | | | | LB | LCB | | | | | |
| 8. | | | | ↓ | LCB | | | | | |
| 9. | | | | LB | LB | | | | | |
| 10. | | | | LCB | LB | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

** Corrective Action:

280404 A

Form 754r9.frm (9/19/2001)

000592

041257D08.SPC Analyzed by MC

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 8 Detector Q.C. Analysis for 07/21/2004 07:09:38

Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 119.531 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.705E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.202E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1323.055 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.368 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.803E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2662.421 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 2.013 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 9.936E-03 | Pass | Pass | N.A. |

Gamma Spectrometer Calibration Log

Date: 7/22/04Reviewed By/Date: LWJ / 7/22/04

| Det. No. | Out Of Service | Background | | Source Check | | | Repeat Source Check | | | |
|-------------|-------------------|------------|----|--------------|-----|------------------------|---------------------|------------------------|-------------------------------|-------------------------|
| | | Started | OK | Started | OK | Failed Parameter(s) | OK | Failed Parameter(s) | Corrective Action Taken ** | Removed from Service |
| 1. | | | | LCB | LWB | | | | | |
| 2. | | | | LWB | LWB | | | | | |
| 3. | | | | LCB | LWB | | | | | |
| 4. | | | | / | LWB | | | | | |
| 5. | | | | ↓ | LWB | | | | | |
| 6. | LWB | | | / | / | | | | | |
| 7. | | | | LCB | LWB | | | | | |
| 8. | | | | / | LWB | | | | | |
| 9. | | | | ↓ | LWB | | | | | |
| 10. | | | | LWB | LWB | | | | | |
| 11. | | | | | | | | | | |
| 12. | | | | | | | | | | |

**** Corrective Action:**280407 A

Form 754r9.frm (9/19/00)

000594

041263D08.SPC Analyzed by MC

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

ID: DAILY CHECK

Detector # 8 Detector Q.C. Analysis for 07/22/2004 06:49:22

Standards File #: 98 (Daily Performance Check 49500-307)

| # | Parameter | Value | n Sigma Test | Bounds Test | T-Test |
|---|---------------------|-----------|--------------|-------------|--------|
| 1 | 60 keV Centroid | 119.481 | Pass | Pass | N.A. |
| 2 | 60 keV FWHM | 7.816E-01 | Pass | Pass | N.A. |
| 3 | 60 keV Efficiency | 7.170E-02 | Pass | Pass | N.A. |
| 4 | 662 keV Centroid | 1322.681 | Pass | Pass | N.A. |
| 5 | 662 keV FWHM | 1.416 | Pass | Pass | N.A. |
| 6 | 662 keV Efficiency | 1.764E-02 | Pass | Pass | N.A. |
| 7 | 1332 keV Centroid | 2661.704 | Pass | Pass | N.A. |
| 8 | 1332 keV FWHM | 1.999 | Pass | Pass | N.A. |
| 9 | 1332 keV Efficiency | 8.865E-03 | Pass | Pass | N.A. |